

Supply Chain Management and Performance: A Study on East African Pharmaceuticals PLC (EAP) in Addis Ababa, Ethiopia

*A Thesis Submitted to the School of Graduate Studies of Jimma University in
Partial Fulfillment of the Requirements for the Award of the Degree of Master of
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By

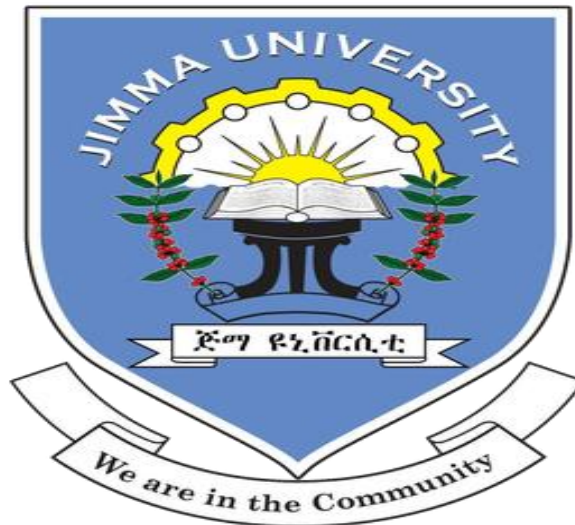
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ABSTRACT

The objective of this study was to assess supply chain management and performance of EAP PLC. The study used descriptive as well as explanatory research designs. The study employed census. Primary type of data was collected with closed and open-ended questionnaires. In order to analyze the data collected, Pearson's correlation and multiple linear regression analysis were used. The study findings showed that strategic supplier partnership is the key factor that has a strong positive and statistically significant effect on supply chain management performance followed by information sharing practice and contract management practice. The level of supply chain management performance is not at a strong level yet. Furthermore, that scarcity of local supplier base was a big challenge for the EAP with the current foreign currency shortage, lack of communication, lack of clearly defined specifications/requirements with detailed technical specification, delivery time promised to customer are supply chain management challenges of EAP PLC. The supply chain management practice of EAP is weak; it is not well managed, and implemented to get the maximum possible benefits resulting from effective supply chain management. It is recommended that EAP should strengthen its supply chain management by putting greater effort to the implementation of some key best practices. Specifically, the following green supply chain practices should be improved on prequalification of suppliers that are aware of environmental issues, preparation of specifications with suppliers, procurement of recyclable material, and involvement of key suppliers in planning, the company should enhance their technological capacity so as to accommodate greater collaboration and information sharing between the institution and suppliers as well as internally. Finally, EAP should engage in training of the work force and developing supply chain management skills through workshops and systematic training programs and promote learning from relevant successful experiences in this area. Future research can expand the domain of SCM practice by considering additional dimensions such as geographical proximity, JIT/lean capability, cross-functional coordination, logistics integration, and agreed supply chain leadership, which have been ignored from this study. The future study can also test the relationships/dependencies among dimensions of SCM practices.

Key words: *Supply chain management, performance, strategic supplier partnership, Contract, contract management, information sharing*

DECLARATION

I declare that the research report entitled “Supply Chain Management (SCM) and performance: A Study on East African Pharmaceuticals PLC (EAP) in Addis Ababa, Ethiopia” **submitted** to Research and Postgraduate Studies’ Office of Business and Economics College is original and it has not been submitted previously in part or full to any university.

Date: June 20, 2020

CERTIFICATE

We certify that the Research Report entitled “**Supply Chain Management and performance: A Study on East African Pharmaceuticals PLC (EAP) in Addis Ababa, Ethiopia**” was done by Mrs.Hibirework Muluken for the partial fulfillment of Masters Degree under our Supervision.

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ACRONYMS

3PL	Third Party Provider
AHP	Analytical Hierarchic Process
APCC	Australian Procurement and Construction Council
API	Active Pharmaceutical Ingredient
BPR	Business Process Reengineering
CMP	Contract Management Practice
EAP	East African Pharmaceuticals Plc
EPA	Ethiopian Pharmaceutical Association
FMOH	Federal Ministry of Health
GC	Gregorian Calendar
GMP	Good Manufacturing Practices
HR	Human Resource
ICT	Information and Communication Technology
ISP	Information Sharing Practice,
IT	Information Technology
ITC	International Trade Centre
JIT	Just in Time
MBA	Master of Business Administration
OP	Organizational Performance
PCR	Procurement Capability Reviews Methods
PCRM	Procurement Capability Reviews Assessment Model
PFSA	Pharmaceutical Fund and Supply Agency
PLC	Private Limited Company
QA	Quality Assurance
QC	Quality Control
R&D	Research and Development
ROI	Return on Investment
SC	Supply Chain
SCM	Supply Chain Management

SCMP	Supply Chain Management Performance
SCP	Supply Chain Performance
SCPMS	Supply Chain Performance Measurement System
SPSS	Statistical Package for Social Science
SSP	Strategic Supplier Partnership
SSPS	Strategic Supplier Partnership,
TQM	Total Quality Management
US	United States
VIF	Variance Inflation Factor

CHAPTER ONE: INTRODUCTION

This study examined assessment of supply chain management and performance in East African pharmaceuticals manufacturing in Ethiopia. The factors in this study conceived as the independent variables included of strategic supplier partnership, supplier selection, information sharing, Green Supply Chain Management Practices, Information Technology, outsourcing, Logistics, training and contract management while supply chain management performance (Operational performance) as the dependent variable. This chapter includes background of the study, statement of the problem, objectives of the study, research questions, research hypothesis, significance of the study, scope & limitation of the study and organization of the paper.

1.1 Background of the Study

Supply chain management (SCM) is the set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses, and stores, so that merchandise is produced and distributed at the right quantities, to the right locations and at the right time in order to minimize system wide costs while satisfying service level requirements (Simichi-Levi D., Kaminiski P. & Simichi-Levi E., 2008).

One of the most relevant evolutions of modern business management is that companies compete as networks of partners, rather than as single autonomous companies. Traditionally composed of suppliers, manufacturers, wholesalers, and customers, these partners form a network of relationships that is known as a supply chain. Closely related to supply chain is the concept of supply chain management, which emerged from the natural intuition that adequate management of supply chain products, information, and funds will improve supply chain competitiveness and profitability (Chopra & Meindl, 2001).

Christopher (1998) defined supply chain management as “The management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole”(Christopher, 1998).

The foundation of supply chain management is underscored in this definition in that supply chain management focuses on the optimization of system wide performance, not the narrow interests of single partners. Despite the supply chain management's goal being straightforward, decision making in order to design, plan, and operate a supply chain in an efficient manner remains challenging. One main concern is that centralized decision settings in a supply chain, are not always present in supply networks (Reiner, 2005).

If the blocs and alliances between countries are old, the forms and methods have evolved, diversified and extended to companies, to form giant multinational companies, through horizontal and vertical integration (Shoghari & Abdallah,2016). As a result, the concept of supply chain emerged and the information and communication technology revolution facilitated the process of integration between the scattered company entities throughout the world, as well as the integration between independent companies that operate within one supply chain (Shoghari & Abdallah, 2016).

The integration of supply chain processes can provide an effective means by which costs can be reduced and customer service levels improved. To achieve it, organizations should become part of an extended, integrated supply network can also expect that this will require an infrastructure enabling effective information flows and streamlined logistics. The most effective network therefore is the mix of information requirements, physical logistics and collaboration right, providing shared benefits to a majority of partner organizations (Power, 2005). Integration goes in a forward as well as a backward direction (Cousins and Menguc, 2006), and the set of SCM business practices aims to add customer value and optimize the whole entity instead of single parts (Cooper & Ellram, 1993; Cooper et al., 1997; Heikkila, 2002). It is the power behind such business process integration that allows companies to exploit the advantages of SCM and thus achieve better performance (De Treville, 2004).

Furthermore, among the administrative foundations that the supply chain has altered is the form of relationship with the customer and suppliers, where its administration moved towards more cooperation and coordination for the formation of the supply chain, and a part of the data and information moved to exchange with customers and suppliers, and the responsibility of inventory control moved to their suppliers. The concept of the project resource planning system spread to

the project resource planning system, which includes suppliers and customers. With the intensification of competition, supply chain started taking into account the competition through the relationship management between suppliers, dealers and customers in a way that aims at overcoming the competitors, and this competition requires from managers a speed in the decision making, to avoid facing problems and seizing opportunities, and since the final consumer of the commodity is the customer who will supply the profit for the company, it has become necessary to assess SC management elements of the supply chain on the performance of SCM, to see the points that are positive on organizations' performance, thereby increase sales and profits of the company and avoid policies that adversely effect on the decline of organizations' performance(Shoghari & Abdallah, 2016).

The concept of SCM requires measuring overall supply chain performance rather than just the performance of the individual chain members. It is the combined performance of the supply chain, the final outcome of the efforts of all integrated members that is of greatest importance from a measurement perspective. Although measures of supply chain performance differ in terms of individual indicators employed, virtually all have one overriding focus continuous improvement of end customer service (Kulkarni & Khot, 2012).

Timely and accurate assessment of overall system and individual system component performance is paramount. An effective performance measurement system (i) provides the basis to understand the system, (ii) influences behavior throughout the system, and (iii) provides information regarding the results of system efforts to supply chain members and outside stakeholders. In effect, performance measurement is the glue that holds the complex value-creating system together, directing strategic formulation as well as playing a major role in monitoring the implementation of that strategy. (Kulkarni & Khot, 2012).

Organizational performance refers to: How well an organization achieves its' market-oriented goals as well as its financial goals (Yaminetal.,1999). The short-term objectives of SCM are primarily to enhance production performance, while long-term objectives are to increase market share and profits for all members of the supply chain (Tanetal.,1998). Lietal. (2006) stated that any organizational initiative, including supply chain management, should ultimately lead to enhanced organizational performance.

The EAP company has relationship with upper stream (Suppliers) particularly for getting raw materials like for different medicines, chemicals, spares for pharmaceutical machines which helps in the process of the production. The case company also has strong relation with downstream(customer). The company supplies its products for organizations e.g. and other distributors, and final users.

Supply chain consists of the whole activities associated with products and services movement from raw material stage to final products which are consumable by customers. This movement includes financial and information flow as well as material flow. In other words, supply chain is a network consisting of downstream and upstream organizations which are involved in different processes and activities that create value for end customers in the form of products or services (Christopher,1998).

East African Pharmaceuticals PLC (EAP) is one of the first privately owned joint venture direct foreign investment Pharmaceutical factory established in 1996 GC by British and Sudanese investors with the intention of producing human and veterinary medicines. It was the first of its kind to manufacture veterinary medicines mainly for Ethiopian market and partially for selected neighboring African Countries and the Middle East Markets. The company has a well-established Production, QA, R&D, QC, Marketing, logistics and Supply Chain, Engineering, and Admin and HR departments with a highly experienced senior technical staff to diligently carry out its manufacturing activities (EAP annual internal report, 2019).

Currently, EAP has three product lines (two human product lines (Tablet & Capsule) and a veterinary line) and is engaged in the production of about 40 varieties of medicines for the local market. All its three production lines are separated with a unidirectional flow and fulfill GMP requirements. As far as logistics and Supply Chain is concerned almost all the inputs used in the production process are imported from abroad through open tender and Proforma from legally eligible suppliers. It supplies all of its production output to the local market using both private and state-owned intermediaries (Pharmaceutical Fund and Supply Agency, PFSA). The latter accounts for 65 percent (age) of total demand, and distribute the products to government hospitals and health centers (Sutton & Kellow, 2010).

The Production lines annual production capacity is declared as follows:

- Tablet Human Production Line Capacity = 500,000,000
- Capsule Human Production Line Capacity = 300,000,000
- Bolus Veterinary Production Line Capacity = 50,000,000

The Company has 157 permanent employees with different professions. Some of these include Pharmacists, Chemists, Engineers, Senior Mechanics, IT specialists & a multitude of Technical & Skilled workers. EAP's Office and Factory are situated at the heart of the Capital City; it is located at Gourd Shola Industrial area, in front of Jakros homes(EAP published company profile, 2000).

The power of having an effective and efficient supply chain is more important now than ever before therefore, to reduce inefficiency factors and to ensure smooth operations, it is very important to assess supply chain performance.

The aim of the study was to assess the supply chain management and performance of EAP; one of the pharmaceutical manufacturing companies in Ethiopia. Therefore, the researcher intended to test the framework identifying the relationships among SCM dimensions (Practices) and SCM performance of the EAP PLC.

1.2 Statement of the Problem

According to Haftom, (2014), Supply chain inefficiencies lead firms to incur additional cost and receive many complaints from the customers who lost their trust on the company. Some of these inefficiencies are longer time lag in the process of delivering the goods to end customers, fragmented contract with suppliers and internal/external integration problem, which are all related to the operational performance of the company.

According to the company annual performance evaluation report (2019), EAP Plc has worked a lot in improving its operational performance but it does not reach as per the required level to meet the customers' needs and demands. The report also recommends the company should improve the planning, distribution, supplier and customer relationship approaches and it is

required to reduce the waste of inventory by optimizing the supply chain practices of the company.

Even though the supply chain is well reflected in the business strategy of EAP Plc, its predicting factor for operational performance is not known and defined. It is not possible to identify the improvement areas on the company supply chain management practices and its relationship to the operational performance. Specially, the regularity of distribution of the right product/service, the right quality at the right time depends on the effective implementation of supply chain management practices.

In EAP Plc, the operational performance is highly impacted by the problem in information sharing across the internal/external customers. There are problems also which lead to unnecessary inventory hoarding and inefficient use of inventories. The 2018 annual report of the company supply chain division also shows that there is planning gap across the internal divisions of the company and poor contract administration practices which leads to the ineffective and inefficient utilization of resources and also leads the company to unable to meet the needs and demands of its customers.

Supply chain practices inefficiencies such as inventory management efficiency, waste on the company operation and asset, inefficient supplier relationship and the integration problem across the company are observed. This also leads to the problem in the operational performance and affecting profitability and SC operations of the company.

A number of literatures and empirical researches revealed that regarding supply chain management and performance in public sectors in terms of strategic supplier partnership, supplier selection, information sharing, Green Supply Chain Management Practices, Information Technology, outsourcing, Logistics, training and contract management with the inclusion of these variables discretely in their research in some African countries and worldwide. Even though the studies have been conducted in other countries that have different demographic, economic, political and environmental factors from Ethiopia and hence their findings cannot be generalized to the Ethiopian context. Different researchers have tried to address some of the problems of supply chain management in some public organizations in the country. These include: Assessment on the Impact of Supply Chain Management practice on Organizational

Performance by Desalegn (2017); Assessment of Supply Chain Management in Public Building Construction Projects in Addis Ababa by Kebede (2017); supply chain management practices, Challenges and opportunities: by Ejassa (2019); Employees' Perception on the Effects of Supply Chain Management Strategy on Firm Performance by Gebreyesus (2016); Assessment on Supply Chain Management Performance By Fikru (2013) and Supply Chain Management Practices of Pharmaceuticals Manufacturing Companies of Ethiopia by Sewuye (2013).

However, none of the above studies has adequately assessed supply chain management and performance in the pharmaceuticals sectors in terms of operational performance. Therefore, the study assessed supply chain management and performance in EAP in terms of strategic supplier partnership, information sharing and contract management which are objectively different from previous studies. The aim of this study is to full fill the research gap and make the supply chain management more efficient, transparent and accountable to improve long-term relationship with customers and suppliers and reduces wastage of resources through successful implementation of supply chain management, which in turn contributes to the country's development.

1.3 Research Questions

- What looks like the implementation level of SCM practices in EAP Plc?
- What are the challenges that affect SCM in East African pharmaceutical industry?
- What is the relationship between SCM practice and performance of EAP PLC?

1.4 Objectives of the study

1.4.1 General Objective of the Study

The general objective of the study was to assess the supply chain management performance of East African Pharmaceuticals P.L.C

1.4.2 Specific objectives

- To assess the implementation level of supply chain management practice of EAP
- To identify the challenges of supply chain management practice in East African pharmaceutical industry.
- To determine the relationship between SCM practices and the performance of EAP.

1.5 Research Hypothesis

This study is an empirical research on the supply chain management practices in relation to (strategic supplier partnership, information sharing and contract management) and EAP plc SCM performance dimension (quality, timeliness of delivery and cost performances).

Prior studies about the relationship between SCM practices and SCM performance indicated that; strategic supplier partnership has financial benefit by creating low inventory, reduce time to market (Ragatz GL et al., 1997), reduced transportation cost, quick replenishment capability (Tan KC, et al., 1998) and improve supplier performance. As mentioned by G. OMEGA (2000) information sharing associated with the lower total cost, the higher-order fulfillment rate and Jarrell JL (1998) argue that the shorter-order cycle time leads to high levels of supply chain integration by enabling organizations to make dependable delivery. Information quality contributes positively to customer satisfaction and partnership quality (Spekman RE, et al., 1998). According to Moslem et al. (2013) organization having high level of operational performance will have competitive advantage through price/cost, quality, delivery dependability, time to market and product innovation and increase the level of customer responsiveness and satisfaction (Power DJ et al., 2001). Based on the above argument the relationship between SCM practices and operational performance is hypothesized as follows:

*H₁: The **higher** the level of Strategic Supplier partnership, having the higher the level of operational performance of EAP Plc.*

*H₂: The **higher** the level of information sharing, having the higher the level of operational performance of EAP Plc.*

*H₃: The **higher** the level of contract management, having the higher the level of operational performance of EAP Plc.*

Where; hypothesis letter subscribes: H₁, H₂ and H₃ represents alternative hypothesis.

1.6 Significance of the study

Investigating the practices of supply chain management practices and performance of the organization in this complex and dynamic business world is believed to have the following

importance's to the academicians, corporate managers, policy makers; and generally, for business practitioners, and specifically, for the case company, EAP Plc.

Specifically, this study has the following main significances: It paves the way for educators or training institutions to consider when designing training on the issues relating to the SCM and it also serves as a spring board to conduct further and more detail study in the area; this is because at the current situation there are only few researches were conducted in the related area in Ethiopia, especially in EAP Plc.

1.7 Scope of the Study

SCM encompasses vast areas of managerial practices. However, it is difficult and unmanageable to conduct the study in all areas that summarizes SCM in terms of time, finance, and research manageability. Therefore, the scope of this study is delimited to assess the SCM practices and performance of the company selected SCM and related six departments and only few permanent customers of the company in terms of topic.

The subject scope of this study is also delimited to the organization's point of reference towards the supply chain management practices (strategic supplier relationship, information sharing and contract management) and the SCM performance was delimited to operational performance. The area of the study is also delimited to the case company i.e., EAP Plc.

1.8 Limitation of the Study

It is difficult to cover entire domain of supply chain just in one study. The research sample didn't incorporate all the supply chain participants namely: the suppliers and customers due to time and financial constrained so that it couldn't be generalized/applied to the complete chain of the company under investigation. On the other hand, constructs of SCM are not only limited to SCM practices selected (strategic supplier relationship, information sharing and contract management) in this study. Therefore, it is not representing all constructs that could explain SCM practices.

1.9 Organization of the paper

This paper has been structured in five chapters. The first chapter is an introductory section that includes introduction, background of the study, statement of the problem, objective of the study,

significance of the study, scope & limitations of the study and presents the organization of the entire study. Chapter two deals with theoretical review, empirical literatures and critics about supply chain management practices and their effect on organizational performance were highly considered in this chapter.

Chapter four discuss about data presentation, analysis and interpretation, different tables and figures are used in this part to describe and analyze the quantitative data. Finally, the fifth chapter presents the major conclusions that drawn from analysis and findings of the study and possible recommendations for the identified problems also included.

CHAPTER TWO: REVIEW OF LITERATURES

This chapter of the study focuses on review of relevant conceptual issues, theoretical framework and empirical review related to the topic of the study. This chapter also covers topics related to supply chain management, constructs on supply chain management practices, performance and challenges by focusing on previous research in this area and present reviewed literature relevant to this study.

2.1 Theoretical Literatures

A theoretical framework can be defined as a collection of interrelated ideas based on theories. It is a reasoned set of propositions which are derived and supported by evidence. This section provided the theoretical framework.

2.1.1 Bounded Rationality Theory

Economics of organizations recognize that individuals are subject to bounded rationality (Simon, 1951, 1955, 1957, 1961). This means that individuals are limited in their scope to act fully rationally because of limitations relating to both information at their disposal and their computational skills. This makes the writing of complete contracts impossible hypothetically such contracts perfectly solve the coordination and motivation problems. Put another way, in the real world, contracts are incomplete, being costly to create and implement, and imperfect in solving the coordination and motivation problems. These limitations mean that new contracts are being continually determined and old ones adapted, sound project contract management that includes monitoring and control systems that are necessary for effective supply chain management in any successful institution.

2.1.2 The Principal - Agent Framework

This approach classifies the people or parties involved in transactions. Transactions can be characterized by an imbalance of information, so there is likely to be a dependency relationship between the parties involved. In particular, one party to the transaction often has either more information and/or better bargaining power than the other. On this basis the theory identifies two types of parties to a transaction. The principal is a party who wishes to secure provision of some good or service but does not have the necessary specialized knowledge, skills or assets. The

principal employs an agent to undertake this task and in the process delegates some control to that party (Grossman & Hart, 2001).

In their study Zhenxin et al. (2001) illustrates the benefits of supply chain partnerships based on information sharing that is effective through use of information systems in any profit and nonprofit making organizations. The study further found out that a close relationship means that channel participants share the risks and rewards and have willingness to maintain the relationship over the long term through formulation of strategic supplier relationship.

2.1.3 The Concept of Supply Chain Management

Over the past few years, more emphasis has been placed on gaining competitive advantage by organizations locally and internationally by incorporating Supply chain, management practices in their operations. Many organizations have realized the importance of creating an integrated relationship with the suppliers and customers. This simultaneous integration of customer requirements, internal processes and upstream supplier performance is referred to as supply chain management (Tan et al., 1999). With dwindling support from central government to its agencies, there is need for better ways for managing operations so as to reduce cost and increase efficiency. Adoption of good SCM practices can thus provide a good avenue to meet these goals.

The term 'Supply Chain Management' (SCM) was introduced by consultants in the early 1980s (Lambert-Cooper, 2000). It has its origins in the logistics literature (Bowersox et al., 1999) and logistics has continued to have a significant impact on the concept. The scope of SCM has widened over time from intra-organizational focus to more inter-organizational issues (Dubois et al., 2004). According to Tan (2001) there does not seem to be much consistency in the use of it or its exact meaning. Tan also argues that although there are some shared ideas about what SCM is about, there is no universally accepted definition. Absence of universally acceptable meaning of SCM may negatively influence comparability of SCM studies. However, this study adopts the wider meaning of SCM which includes all aspects encompassed in most studies.

Supply chain can be defined generally as where three or more organizations are directly linked by one or more of the flows of products, services, finances and information from a source to a customer (Mentzer et.al; 2005). In this context of study, SCM involves managing complex flow of information, materials and money across multiple areas both within and among organizations.

The aim is to achieve goals related to total system performance. With the current business environment, organizations cannot battle entirely as individuals. They must rely on the other organizations in their supply chains to successfully compete in the global market.

The concept of SCM builds on the theories of the firm, especially transaction cost economics, Porter's value chain and the network approach which has become established as a useful business paradigm. The other theory is Best practices theory - a method that has consistently shown results superior to those achieved with other means, and that is used as a benchmark. In addition, a "best" practice can evolve to become better as improvements are discovered. Best practice is considered by some as a business buzzword, used to describe the process of developing and following a standard way of doing things that multiple organizations can use.

It has been argued that the SCM area lacks sufficient theoretical underpinnings resulting in simplified conceptualizations of supply chains and their contexts, and furthermore, that theory may be helpful to uncover some of the complexity characterizing supply chains. A literature review made (Croom et al., 2000) shows a relative lack of theoretical work compared to empirical based studies.

2.1.4 Supply Chain Management Practices/ Measurements

According to (Li et al., 2006) SMC practices have been defined as a set of activities undertaken in an organization to promote effective management of its supply chain. SCM practices involve suppliers in strategic and operational decision-making, encouraging information sharing and searching for new ways to integrate upstream activities. It also involves developing customer contacts through the use of customer feedback to integrate the downstream activities and delivering orders directly to customers at point of use. To effectively achieve these goals Chow et al. (2008) indicated that it is necessary to locate closer to the market, help suppliers and vendors develop JIT capability, create a compatible information platform and create SCM teams for quality and operational efficiency.

Supply chain practices are related to supply and materials management issues, operations, information technology and sharing (ICT) and customer service (Tan et al., 2002). As mentioned

by McMullan (1996) Supply chain practice also includes technology, cost competitiveness, inventory management and external regulation. All those have to be managed effectively to realize supply chain 's strategic position, which allows competitive advantage (Bratić, 2011).

According to Muhammad (2004) this variable refers to several activities or practices related to operational function of firms. It is used to measure the SCM adoption and its level practices. Related practices are divided into six dimensions namely strategic supplier partnership, customer relations practices, with a view to enhancing their level of competitiveness and performance as well as customer satisfaction (Haque, 2013). SCM involves the coordination and configuration of different process that is necessary to make products available in a timely, reputable, and suitable condition. The distinctiveness of SCM could be achieved by identifying and making use of SCM practices, in organized way. According to Faisal (2011) SCM practices involve a set of activities undertaken by the organization to promote effective management of their supply chain.

Li et al. (2005) defined SCM practices as the set of activities that organizations undertake to promote effective Management of the Supply chain, SCM practices are described include supplier partnership, outsourcing, cycle-time compression, continuous process flow and information technology (IT) sharing, supply chain practices is a way of reducing duplication effects by focusing on core competencies, and use inter-organizational standard such as activity based costing or EDI and eliminating un necessary waste along the supply chain.

Thus, the literature reveals SCM practices from a variety of different perspectives with a common goal of ultimately improving organizational performance. In reviewing and consolidating the literature, four dimensions, including strategic supplier partnership, customer relationship, level of information sharing and quality of information sharing, are selected for measuring SCM practice. The four constructs cover upstream (strategic supplier partnership) and downstream

(Contract management) sides of a supply chain, information flow across a supply chain (level of information sharing and quality of information sharing). It should be pointed out that even though the above dimensions capture the major aspects of SCM practice, they cannot be considered complete. Other factors, such as geographical proximity, structural aspect (Tan et al., 2002), cross functional teams, logistics integration Chen and Pauraj (2004), agreed vision and

goals, and agreed supply chain leadership Min and Mentzer (2004) and Postponement Concept are also identified in the literature. Though these factors are of great interest, they are not included due to the concerns regarding the length of the survey and the parsimony of measurement instruments. The present study, therefore, proposes SCM practices as a multi-dimensional concept.

2.1.4.1 Strategic Supplier Partnership

According to Li *et al.* (2006) strategic supplier partnership is a long-term relationship between the organization and its suppliers. Strategic supplier partnership emphasizes direct and long-term relationship and encourages mutual planning and efforts to resolve problem. Supplier and organizations can work together more closely and eliminate useless time and effort. Effective partnerships with suppliers can be critical factor to guide supply chain management.

Strategic partnership between organizations promote shared benefits and ongoing collaboration in key strategic areas like technology, products, and market (Yoshino and Rangan, 1995). Strategic partnerships with suppliers lead organization working closely and effectively with a few suppliers rather than many suppliers that have been selected on the basis of cost efficient.

According to (Tan *et al.* (2002) many advantages of consisting supplier early in the product-design process are that suppliers can offer cost effective design alternative, assist in selecting better components and technologies, and aid in designing assessment. An effective supplier partnership can be a critical component of a leading-edge supply chain (Noble, 1997). As mentioned by Rosenzweig (2003) the main objective of strategic partnerships with suppliers is increasing the functional capability desired supplier. Therefore, strategically managed long term relationship with supplier has positive impact on a firm's supplier performance (Cooper & Ellram, 1993). SCM suggests that firms need to integrate with their suppliers and customers to achieve both financial and non-financial growth objectives (Tan, 2001).

Stank *et al.* (2001) asserted that, the industry leaders increasingly build competencies to integrate with suppliers and customers and find that, these competencies lead them to supply chain excellence. Lee (2002) also argued that coordinating operational activities through joint planning with suppliers also results in inventory reduction, smoothing production, improve product quality, reducing supply uncertainty and lead time reduction.

2.1.4.2 Information Sharing

According to Lee and Whang (2000) information sharing is an important aspect in achieving perfect integration in a supply chain. Cross functional integration and inter organizational integration requires the visibility of information across the supply chain. Poor information sharing between partners in a supply chain will result in poor coordination that will lead to many serious problems such as high inventory levels, inaccurate forecasts, low resource utilization, and high production costs.

Information sharing is highly considered as the way to reduce demand uncertainty. The way companies share information whatever the confidential level or not; determines the success of the collaboration. Lazarevic *et al.* (2007) asserted that the nature of information to be across the supply chain differs based on the degree of integration, institutional trust and availability of infrastructure that facilitate the practice. Companies need to view their information as a strategic asset and ensure that it flows with minimum delay and distortion (Li *et al.* 2006). Having, different interests & opportunities by supply chain participants affect the quality of information. Given these predispositions ensures that, the quality of the shared information becomes a critical aspect of effective supply chain practice (Feldmann and Muller 2003).

According to Feldmann and Muller (2003) organizations need to view their information as a strategic asset & ensure that it flows with minimum delay & distortion. Therefore, an informatics perspective is vital in the supply chain since information flow is an integral part of SCM and material flow is closely dependent on information flow.

Many researchers have suggested that the key to the seamless supply chain is making available undistorted and up-to-date marketing data at every node within the supply chain (Child House and Towill, 2003). Effective use of relevant and timely information by all the functional elements in the supply chain is considered as a competitive factor and distinctive (Ahmadi, 2005). Failures can occur in case of information delays, shortage or distortion across the supply chain (Power, 2005). The empirical findings of (Child house and Towill,2003) reveal that simplified material flow, including streamlining and making highly visible all information flow throughout the chain, is the key to an integrated and effective supply chain.

The information sharing facilitates to enhance the efficiency and effectiveness of supply chain as it inherits certain advantages. As mentioned by Zhao and Xie (2002) these advantages include better coordination between different departments, better coordination between supply chain members and better control of the supply chain processes, reduced product design time, shorter production lead-time and stable outputs with consistent quality.

2.1.4.3 Contract Management Practice

The effective practice of contract management in an organization is critical in boosting its operational performance. In procurement, contract management practice is undertaken to achieve organizational goals as stated in the strategic plan. Operational performance measurement ensures that the overall strategic objectives of an organization are effectively and efficiently realized. Clearly, contract management boosts an organization's operational performance measured against the various performance measures, such as, quality, flexibility, speed, efficiency, and supplier relationship. Costello (2008) argues that suppliers get motivated to do business with firms that have effective contract units where activities are straightforward, needs and deadlines met, and costs are well managed; hence enhanced operational performance. As well, Nysten-Haarala, Lee and Lehto (2010) sought to establish the effective incorporation of flexibility in contracting process. They found out that flexibility is important in contract management; thus improved operational performance.

The effect of good contract management practice on operational performance can be measured successfully using suitable operational KPIs. Depending on the nature of the business, operational measures vary across firms and industries (Jusoh & Parnell, 2008). As George (2005) notes, in such a competitive corporate world, organizations strive to establish performance measurement metrics to gauge against their targets and business rivals. Some of the key indicators of operational performance used include: efficiency, quality, flexibility, compliance, supplier relationship, supplier defects rates and procurement cycle time (Cho & Pucick, 2005).

With reference to Erridge, Fee and McIlroy (2001), in a procurement department where contract management practices take place, a number of operational performance measures are essential.

Firstly, supplier defect rate is a key operational performance indicator used to measure the quality of purchases carried out by a procurement department. This can be achieved by dividing the number of defects by the total purchases, or defective shipments by total shipments.

Operational performance can also be measured by use of customer satisfaction indicator. Internal customers' rating on their satisfaction levels with the department's performance is essential in achieving this. If many firms use similar questions, benchmarking levels of satisfaction is achievable. Customer satisfaction helps in measuring the department's capacity to meet the needs and expectations of internal customers (Ray, 2011).

As Mead and Gruneberg (2013) suggest, importance of supplier idea execution is another key operational performance measure in contract management. Advanced procurement firms actively seek ideas from suppliers for revenue growth, cost savings among others. The ideas are tracked and their contribution to the firm's bottom line is measured. This helps to measure the department's ability to leverage intellect in the supply base. Another useful KPI in operational performance is the procurement cycle time. This can be measured by the average time taken between requisition submission and placement of a purchase order. This can also be determined by the time taken from the start of sourcing process to the time of contract signing. The KPI is important in measuring the department's productivity (Sollish & Semanik, 2012). The aforementioned performance indicators are instrumental in establishing the connection between contract management practice and operational performance.

2.1.5 Supply Chain Performances

Empirical studies by Ross (1998), confirmed the theory that, SCM practices considerably improve companies' performance. Moreover, the results specifically highlight that IT and information sharing significantly contributes to more performance measures than supplier and customer relationship practice. With regard to the relationship between SCM strategies and operational performance, (Tan et al., 2002) observed that the following SCM-related strategies were significantly related to overall product quality and overall customer service: namely determination of customer's needs, reduction in response time and supplier delivery time, improvement of integration activities, trust among supply chain members, communication of future needs, use of information sharing, and assistance of suppliers in JIT (just in time) capability.

The supply chain performance is now increasingly perceived as critical means for attaining a competitive edge over others competitors. The traditional way of measuring performance based

on cost alone has giving way to more innovative approach incorporating non-cost performance measures like quality, flexibility, time, and the need for customer satisfaction (Ashish, 2006).

The driving force for a supply chain performance is the supply chain performance enablers: delivery speed, new product introduction, collaboration across enterprise boundary, data interchange, flexibility, and customer responsiveness. This in turn leads to a positive effect on the overall cost, lead time, quality, and service level, over all capacity, which constitutes supply chain determinants. The current market situations require increasing service levels and quality in union with low cost and small lead times (Ashish, 2006).

Supply chain performance is a two-dimensional definition that consists of effectiveness & efficiency. Effectiveness is about 'doing the right things' & efficiency is about 'doing things right'. Supply chain effectiveness relates to the preference of the end-consumer & the sole indicator is consumer satisfaction (David et al., 2006). Therefore, customer satisfaction is coming from meeting customer requirements, fitness for use, continuous improvement, elimination of waste, customer support, flexibility to meeting demands, design and engineering, quality assurance, inventory and etc (Eyong, 2009).

2.1.6 Supply Chain Performance Assessment

Supply chain practices are defined as a set of activities undertaken in an organization to promote effective management of its supply chain. Performance measurement is very important as a strategic tool and also provides means to achieve the objectives required, fulfilling a firm's mission and strategy (Busi, 2005; Lapide, 2000; & Neely et al., 1995).The performance measurement system should be easy to understand at all levels in the organizations and it should contain a limited number of relevant measures statements.

The goal of supply chain management is to improve supply chain process so as to deliver the product properly, timely and at lowest cost to the customer. The belief that supply chain management can improve responsiveness to customers and increase profits has drawn the attention of many managers to the notion of supply chain management (Husseini et al., 2010).

According to Ketchen, Giunipero (2004) factors leading organizations toward supply chain management include the following: the need for improvement activities; increased outsourcing;

increased transportation cost; increased competitive stress; increased globalization; significance of global commerce; supply chain complexity; and the need for inventory management.

Performance assessment is an essential management tool which helps improve performance to increase supply chain efficiency. Although supply chain management is commonly practiced in the industries and numerous articles have been published about supply chain actions and theories, not much attention has been given to supply chain management (Chan et al., 2003). Performance assessment is vital to the success of every organization because it facilitates understanding behaviors, shaped behavior and improves competitiveness (Manian et al., 2010).

Performance assessment can reveal important feedback information that enables managers to monitor the performance, expose progress levels, increase motives, improve communications, and identify problems (Waggoner et al., 1999). Performance assessment is an integral part of effective planning, control and decision making (Manian et al., 2010). To discern accurate supply chain performance, the outcomes of measuring have to be visible and fully understood by all partners across the supply chain before continuous improvement in performance can be achieved (Wisner et al., 2005). The aim of performance measurement is to recognize performance gaps among service levels.

Shepherd and Gunter (2006) studied the performance measurement systems and metrics of supply chains by critically reviewing the contemporary literature and suggesting three main categories of supply chain performance metrics; time, cost and quality.

- **Time** - those directly perceived by the customers are articulated as Customer Response Time (The amount of time between an order and its corresponding delivery) & On Time Delivery (orders delivered on or before the due date)
- **Cost** - purchasing/ sourcing cost associated with sourcing products from an upstream member of a supply chain
- **Quality** - quality of delivered goods in meeting the needs and expectations of customers.

When having an excellent supply chain, the company can provide products to its customers that are of high quality (De Meyer et al., 1989), at low cost (Goonatilake, 1990), within short Customer Response Time (Haug, 1985) and give the requested customer support, (Hoover et al., 2001). Efficient Supply chain keeps what is promised, delivery in time, short lead time, and right

quality and to lowest possible cost. This definition includes both the performance focus and the cost focus.

2.1.7 Challenges /Barriers of Supply Chain Management

SCM related-problems mainly occur from uncertainties and an inability to co-ordinate several activities and partners (Raghunathan, 2003). He identified top ten barriers to supply chain management these are: Inadequate information sharing, Poor/conflicting measurements, Inconsistent operating goals, Organizational culture or structure, resistance to change- lack of trust, poor alliance management practices, lack of supply chain vision (understanding), lack of managerial commitment, constrained resources and no employee dedication/ empowerment.

Currently, companies are striving for lower cost so that they will be competitive in the market while they have to maintain their service level. The key factor to offering the features that the customers want at the level of service they are willing to pay for is to minimize the lead time. One approach suggested to solve this problem by Waters (2003) is synchronized material movement where all parts of the supply chain have access to the information at the same time. The SCM help in reduction in the inventory, accurate information sharing and develop trust among the SC partners. Yet, despite these important benefits, organizations continue to encounter a barrier which hinders them from effective implementation of supply chain.

These barriers are known as SCM barriers. They exist between inside and outside of manufacturing organization. According to Vishal and Shah (2016) unclear organization objective, lack of top management commitment and support, short-term decision-making perspectives, lack of information technology, poor ICT structure, lack of education and training to employee and supplier employee, lack of necessary tools management skills and lack of motivation and employee involvement are some of barrier exist within manufacturing organization while resistance to change, lack of measurement system ,unwillingness to share information among supply chain partner, lack of inter-organizational cooperation and coordination are barrier outside manufacturing organization.

Chopra and Meindl (2007) designated the supply chain as consisting of the parties who are involved in satisfying the customer demands. The members of supply chain are included the manufacturers and suppliers, warehouses retailers, transporters and customers and other which

are all players of supply chain. They stated that the supply chains more clearly as one firm producing a raw material and selling it to the second firm which then uses raw material and turns it to a component. The third firm buys this component from the second firm and assembles the component into a product sold to the fourth firm which might be a wholesale distributor. This firm distributes the product to the retail merchants who finally sell this product to the end users (customers). The set of firms which pass these materials forward can be referred to as a supply chain.

2.2 Empirical Literatures

Nkwabi (2019) on Supply chain management constraints in Tanzanian small and medium enterprises described that although large enterprises have been able to successfully implement SCM, it is different in small and medium enterprises (SMEs) as they are faced with several challenges (constraints) that hinder the effective implementation of SCM. Variables such as technological difficulties, poor coordination with the supplier's lack of government support, resources, funds, access to markets and top management support, issues in information sharing, inventory management, poor SCM knowledge and unskilled workforce all affect the SCM implementation in SMEs. The findings reveal that there is a significant relationship between effective SCM implementation in Tanzanian SMEs and constraints such as technological difficulties, poor coordination with suppliers, a lack of support from the top management and insufficient funds. This indicates that Tanzanian SMEs are mostly constrained by technological difficulties, poor coordination with their suppliers, a lack of support from top management and insufficient funds. The results also revealed that information sharing, inventory management, a lack of access to markets and poor SCM knowledge were insignificant constraints affecting SCM implementation in Tanzanian SMEs, thus indicating that there are no significant relationships between these constraints and SCM implementation in Tanzanian SMEs. The study recommends that support from the government in terms of financial assistance could help the SMEs to overcome the financial constraints and to invest more in recent technologies to help effectively implement SCM. Training from SME governing bodies such as the Small Industry Development Organization (SIDO) in Tanzania could help to increase awareness of the importance of SCM.

Furthermore, forming and maintaining long-term relationships with suppliers is critical for effective SCM implementation.

Belay (2019) on Effect of Procurement Management Practice on the Project Performance: in Commercial Bank of Ethiopia (CBE): the researcher has assessed the effectiveness of procurement practice in terms of Inventory Management practice, Need Assessment, Supplier sourcing and Contract Management by adopting explanatory research design. The researcher used Regression Analysis to analyze data presentations to answer the general objective which was to find out the effect of need assessment, supplier sourcing processes, contract management and inventory management on project performance of CBE. The researcher found out that employee Commitment to Need Assessment has a significant effect on Project Performance of CBE; Supplier Management has a significant effect on Project Performance of CBE; Contract management level involvement has a significant effect on Project Performance of CBE and Inventory management has a significant effect on Project Performance of CBE. The study recommended that CBE should include the four procurement functions i.e. need assessment, supplier sourcing, contract management and inventory management in their implementation of projects.

Maalim, A.K, (2016) in his study on Assessment of Supply Chain Management Strategies and Competitiveness of Kenyan SMES established that there was a positive relationship between supply chain management strategies and firm competitiveness. The study revealed that all the elements of process strategies are positively related to firm competitiveness. Under this strategy, information technology (IT) use was determined to be the most important enabler of firm competitiveness. The study concluded that supply chain management strategies are well-implemented by Kenyan SMEs. Process strategies, through IT use were found to lead to improved transaction speeds and reduced transaction costs.

William and Richard (2016) on Challenges Faced in the Implementation of Supply Chain Management in the Manufacturing sector conducted in selected fourteen from the thirty manufacturing industries in Nakuru town, Kenya. The finding revealed that 89.3% of respondents agreed that challenges experienced in the implementation of SCM in the sector are a) Complicated networks; b) Mistrust and distorted information within the chain; c) Difficult in

making decision to every player; d) Little capacity / stock reserve due to late deliveries; e) Lack of responsiveness by customers /suppliers; f) High operation costs; g) High taxation; h)Fluctuation of fuel prices (petrol / oils and electricity); I) Supply of raw materials especially raw milk is too dependent on the weather conditions; j) Environmental bureaucracy. The study recommended: The management in the manufacturing sector should bring to the attention of every employee the awareness of supply chain management; the management should facilitate the identification of the SCM components to the employees; the management should facilitate the identification of the levels of SCM in their respective firms. Considering only top management would avoid lower level employees and the challenge may not fully covered from low-level perspective.

Mwilu, J.M. (2013) on Supply Chain Management Practices and Performance among Public Research Institutions in Kenya studied SCM with three objectives to establish the extent of supply chain management practices implementation among public research institutions in Kenya, to determine the impact of SCM practices on the performance of research institutions in Kenya and to evaluate the challenges faced by public research institutions in Kenya while adopting SCM. The following were the major findings obtained from the data analysis. Regarding SCM practices, it was found that while a number of SCM best practices had been adopted and implemented to a great extent, majority of the practices have been implemented to a moderate extent. It is worth noting that involvement of major suppliers in planning; an important best practice had been implemented only to a small extent. Thus, few best practices had been fully implemented with majority still lagging behind. Regarding the relationship between SCM practices and firm performance, three variables out of the seven, namely logistics, lean suppliers and information technology were found to have strong statistically significant relationships with performance. The other three variables, namely Green supply chain practices, Long term supplier relationships and outsourcing were found to have weak relationships which were not statistically significant.

Manzouri, Mnizam and Arshad (2011) studied on Problematic Issues in Implementation of Supply Chain Management in Iranian Automotive Industries. The findings of their study revealed that lack of information, need to expert employee, and need to new equipment were

recognized as important problems among those organizations. Moreover, without appropriate equipment and skilled workers SCM takes more time and money to be implemented. Although those organizations did not consider the lack of time and financial problem as the high level of problematic issues, many difficulties in their companies are emerged from lack of financial support. Although automotive industries did not consider the relational problems specifically, lack of information is rooted in the inappropriate relationship among partners, which do not have trust each other to share their information. Subsequently, the problems of SCM implementation were not base on merely a single problem rather on various hierarchical levels of many barriers. Consequently, these key areas were important for managements to invest on and to get training on to be successful in implementing SCM in their organizations.

According to a study by Agusa and Hassan in (2008), on strategic supplier partnership in a Supply Chain Management with Quality and Business Performance in Malaysia investigates the association of strategic supplier partnership (SSP) in supply chain management (SCM) with product quality performance and business performance in the Malaysian manufacturing industries. In the inferential process, relationships between strategic supplier partnership practice, product quality performance and business performance and associations are analyzed using Pearson's correlation, cluster analysis and structural equation modeling (SEM). The findings suggest that strategic supplier partnership practice and implementation have significant associations with product quality performance and business performance. The results of the study was of particular interest to practicing production managers or top level managers for learning about the factors stimulating the adoption of strategic supplier partnership in SCM. The study was used inferential modeling to analyze the instruments which increases the reliability of the research this can be considered as the strength while ill consideration of different factors other than Strategic Supplier Partnership that could be studied and the research finding should not be only used for top managers. These are some of the weaknesses of the study.

2.2.1 Supply Chain Management in Ethiopian perspective

The SCM practices and challenges were studied in different industry of Ethiopia in some different dissertations. The results of different researches in the SCM performance in different commercial and non-commercial sectors of Ethiopia are concluded as poor. Admaw (2010)

studied the practice of SCM for Ethiopian textile firms. It was found that, SCM practices in Ethiopian textile firms are weak and not considering SCM as a strategic tool for competition. Business managers of the textile firms didn't give attention for SCM theories and practices. Also Dereje, (2012) studied the impact of SCM practices on the organizational performances in metal and engineering industries. The result of the study shows that the implementation of SCM in this industry is weak. Also, the SCM practices don't have any relationship with organizational performances except internal lean practices. Mesfin (2007) also studied the SCM and model development study as a case study of Mesfin Industrial Engineering plc. The result of this study shows that most of the employees of the company do not have awareness of SCM. The company also don't use supply chain cost analysis rather than using the traditional accounting system. Also, there are problems in their warehouses. Besides, to the above machine handling problem, ageing, poor preventive maintenance, lack of proper operation, and wear of spare parts are the main reasons for the breakage of machines in Mesfin Industrial Engineering.

Based on the assessment of FMOH for monitoring and evaluation of national drug policy, there was only one local pharmaceutical manufacturing plant in 1993 G.C that is owned by the government. Currently, drug production activity is being under taken by 13 local pharmaceutical manufacturing plants: One government owned, eleven private (unaffiliated with multinationals) and one private (affiliated with multinationals). Three of the factories are engaged in medical supplies production, one on empty gelatin capsule production and nine on finished product formulation using imported raw materials (FMOH, 2003).

According to a study by Sewuye, W. (2013), on Supply Chain Management Practices of Pharmaceuticals Manufacturing Companies of Ethiopia (EPHARM) was done. The objective of the research was to investigate the SCM practices of pharmaceuticals manufacturing companies of Ethiopia by studying the SCM practices of Ethiopian pharmaceuticals manufacturing (EPHARM) Share Company as a unit of analysis. Descriptive and quantitative methods of research were used and data were collected by interview questions, document review and questionnaires. Interview questions were used to study the suppliers' relationship and the SCM practices in EPHARM. Document review was conducted to study the capacity utilization. Based on the questionnaires data were collected from distributors and retail outlets to measure the

supply chain activities. It was found that there is no long term relationship with most of the suppliers, there is information sharing between departments of EPHARM but not with suppliers and distributors. The capacity utilization of the machines is low (only 56.42%). There are no on-time and direct delivery to most of its customers. The customers' satisfaction with flexibility and customers query time is very low. But there is considerable performance with post sales customers' satisfaction. The study concluded that SCM practices of pharmaceuticals manufacturing companies in Ethiopia is weak due to both internal capacity limitation and external factors including infrastructure such as transportation, information technology, financial sectors and regulatory enforcements. The paper recommended selecting best suppliers and distributors and establishing long-term relationship, increasing capacity of the firm, strengthening the marketing unit of the firm and introducing direct delivery services.

According to Sutton and Kellow (2010), and different experts the pharmaceutical supply chain of Ethiopia have two wings. The first is addressing those of the public health facilities through PFSA. The second is addressing the private health facilities through different importers, wholesalers and also PFSA to some extent. PFSA was established in 2007 based on pharmaceutical logistics master plans implementations designed by FMOH. The mandate of PFSA is; it is a sole provider of forecasting, procurement, storage, inventory management and distribution of pharmaceuticals to the public health sector in Ethiopia. PFSA's current supply chain starts with the import of most drugs via the port of Djibouti. These products are then trucked into central PFSA based in Addis Ababa, before being distributed to the various distribution centers (Hubs) and to the hospitals and health centers.

Recently PFSA has established pull system known as integrated pharmaceutical logistics system primarily using the essential data items reported from health facilities regularly every other month. Using its 11 distribution centers (Hubs), PFSA will distribute drugs and supplies to public health facilities throughout the country (PFSA, 2012).

2.2.2 SCM Practices in EAP Manufacturing Company

Based on the interview result of the technical manager, marketing and sales division head of EAP, the SCM practices of the company started from market research. Based on the market

demand collected from the pharmaceutical market, market plan is prepared. The market plan identified the product needed by the market. Based on the product needed, list of raw materials including APIs, excipients, primary and secondary packaging materials to produce the needed products by the market are prepared. These lists of products forwarded to procurement division considering the budget issues. Based on the prepared plan, the procurement division assesses their stock in store by inventory control unit. In addition, those raw materials found in the pipeline are also considered. Once the gaps of raw materials are identified, the remaining quantities are known and cost breakdown for each product is prepared to determine the total budget needed to procure the needed raw and packing materials.

The company has its own purchasing division to prepare the offer analysis to present the General Manager for approval. Once the budget is approved, method of procurement is also determined. Based on the selected method of procurement, purchasing is initiated to get raw materials needed by the company in the budget year.

Production is started if it fulfills the quality parameters of the quality control department. The finished products that are manufactured are distributed to the customers through different distributors and wholesalers including PFSA. The technical manager said that the company measures the capacity of the machines regularly and their status is recorded and reported. Each machine has designed capacity set by the manufacturers of the machine. The company set the machines planned capacity to smoothly function its activities considering its practical capacity. The actual performance or attainable capacity is recorded during operation of the machines. By measuring the performance of each machine using each production line, the efficiency of each machine is recorded and documented.

2.2.3 SCM Practices and Operational Performance

Empirical study focused on supply chain practices on inter-organizational system used, core competences, and elimination of excess in inventory through postponement. According to Ellram et al. (2007) supply chain practices include: managing customer relationship, managing service delivery, managing capacity and skills, flow of cash and information. (Koh, 2007) Classified supply chain practices into strong relationship with customers, strategic partnership with suppliers, e-procurement, just-in time, benchmarking, and outsourcing. Five dimensions of supply chain practices methods including strategic relationships with suppliers, customer

relationship, level of information sharing, quality of information systems and internal lean practices should be noted (Siddiqui, 2012).

Lee (2004) in his case study-based research identified five practices at the supply chain level that are a key to creating supply chain responsiveness. They are: outsourcing, strategic supplier partnerships, customer relationships, information sharing, and product modularity. Chen and Paulraj (2004) used long-term relationship, cross-functional teams, supplier base reduction, and supplier involvement. Min and Mentzer (2004) identified long-term relationship, information sharing, vision and goals, risk and award sharing, cooperation, process integration, and supply chain leadership underlying the concept of supply chain practices.

Choy (2007) found that the long-term success of a firm depends on the reliability of its suppliers and level of satisfaction of its customers. Previous research found that collaborative relationship between customer and supplier has positive significant influence to SC performance improvement. Inventory reduction is one of the main objectives of SC (Wisner, 2005). It is also the most commonly shared data among the supply chain partners. Therefore, several researchers have explored the ways to reduce the inventory in a supply chain. Many researchers have noted that information sharing in the supply chain can play an important role in reducing the inventory level as it allows the companies to quickly respond to market changes thus requiring minimum inventory across the supply chain.

Cousin (2006) also found that customer satisfaction is increasingly being recognized as an appropriate measure for determining how well a particular organization is accomplishing its mission and while customer satisfaction surveys provide valuable information and may be used to improve the entire operation. Thongrattana (2011) also explored that supplier satisfaction and contribution lead to customer satisfaction and SC performance. Technology is an enabler in SC practice for helping supply chain members to establish partnerships for better supply chain system performance. Gunasekaran (2006) explored that information technology is an essential ingredient for business survival and improves the competitiveness of firms. McLaughlin et al., (2003) found that successful companies around the world are partly dependent on their ability to apply IT to SC practice.

Many studies have found that information sharing has great impacts on supply chain performance, especially in reducing the bullwhip effect (Lee and Whang 2000; Xu, Dong et al., 2001; Yu, Yan et al., 2001). Information sharing enables companies to make better decisions in their operation leading to better resource utilization and lower supply chain costs. Better management of information allows companies to be more responsive to customers' demands (Lee 2000; Mentzer 2004).

Realizing the benefits of information sharing depends on companies' ability to utilize shared information in their business processes. Kulp et al. (2004) did a survey to investigate the impact of information sharing on companies' performance. They found that the highest profit margin companies are not simply exchanging information but they combine it with close collaboration. Lee and Wang (2000) argue that information sharing is only enabler for achieving supply chain efficiency. Gavirneni (2002) showed that the benefits of information sharing can be obtained if companies change their operational policy.

To take full advantages of information sharing, some significant changes in organization need to be implemented once information sharing is in place. Companies should move toward collaboration with their partners to achieve common goals of supply chain efficiency that is built based on high level of trust between companies. Lee (2000) argues that collaboration and coordination can be achieved through exchanging decision rights, work and resources. Work realignment is redistribution of physical activities amongst members of supply chain and may lead to reduce total supply chain costs. Work realignment can only be effective if information sharing is in place.

This work realignment needs a cultural shift in organization to treat supply chain partners as if they are parts of organizations. According to different authors supply chain performance and practices have been found to be different among companies with different supply chain characteristics. Chan (2003) compared supply chain performance in three different industries and found that in the electronic industry, achievement of quality, on-time delivery and cost were found to have the highest priority, whereas the logistics service industry concentrated on service accuracy and flexibility.

According to Bowersox and Closs (1996) supply chain cost as cost components are related to:

Order handling, Purchasing or sourcing, Stock handling, Systems needed to handle the Supply like: for example the order system and manufacturing. In relation to performance measurements on the supply chain, Keebler (1999) indicated that there are three principal categories of measurements, namely time, quality and cost. Under this study, supply chain cost refers the purchasing or sourcing cost.

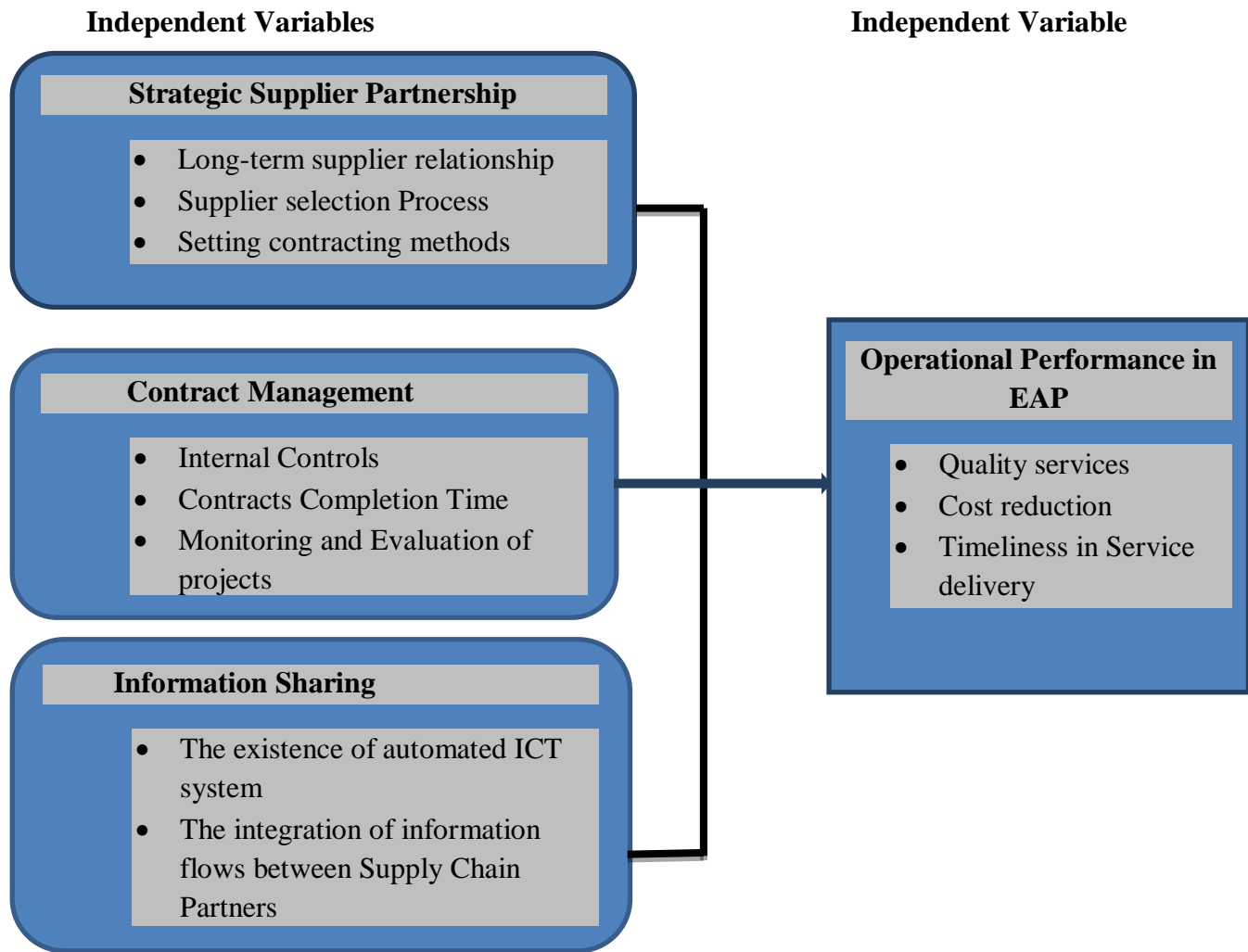
2.3 Identified Literature Gap

Even though the measures of organizational performance and supply chain management vary from organization to organization, they are essential for effective management of any organization. Supply chain management practices are affected by the global operations, the challenge for managers of this new enterprise environment is to develop suitable performance measures and metrics to make right decisions that would contribute to an improved supply chain practices, competitiveness of the organization and its operational performance. Some of the empirical studies only focus on upper tier supply chain i.e. suppliers (Addis, 2015) and some only focus on the lower level supply chain i.e. customers. Some studies like (Suhong, Li, *et al.*, 2004), (Mutuerandu, 2014), (Karimi & Rafiee , 2014), and (Mustefa, 2014) focus on both supplier and customer but the variables used as supply chain practices are varied depending on the organization selected on their study. However, it is absence of complete agreements using the supply chain practice variable and its effect on the performance of the organization. Most of the literature survey shows and suggests for future research on the selected topic, which show the antecedences and consequences of supply chain practice.

2.4 Framework of the Research

SCM performance is defined as the operational excellence to deliver leading customer experience (Simchi-Levi et al., 2003). Theoretically, as described by Mentzer et al. (2001) a supply chain can be defined as "a set of three or more organizations directly linked by one or more of the upstream and downstream flows of products, services, finances, and information from a source to a customer. Conceptual framework is a hypothesized model identifying the concepts under the study and their relationships. The Conceptual framework of the study, adopted from Suhong, Li et al. (2006) and Shepherd and Gunter (2006) modified by the researcher is illustrated on the following diagram.

Figure 1.1: Conceptual Framework of the study.



Source: adapted and Modified from Li *et al.* (2006) and Shepherd and Gunter (2006)

As pointed out by Kimani (2013), Mwirigi (2014), Quesada (2007), among other scholars on the subject under study, the key factors affecting supply chain management are supplier partnership, Contract management, and information communication. Also Shepherd and Gunter (2006) studied the performance measurement systems and metrics of supply chains by critically reviewing the contemporary literature and suggesting three main categories of performance metrics; time, cost and quality.

In the conceptual framework, the independent variables which are believed to have impact on the performance of the selected company are strategic supplier partnership, information sharing and contract management practices. While, the operational performance is considered as a dependent variable. The previous empirical studies conducted by (Ibrahim & Hamid, 2012), (Karimi & Rafiee , 2014), (Li, et al., 2006), (Mustefa, 2014), (Mutuerandu, 2014), (Suhong, Li, *et al.*,

2004), (Yohannes, 2014) , (Wagnera, S.M., et al., 2012) and (Fantazy KA, Kumar V & Kumar U, 2010) has showed that the higher level of supply chain practices implementation can lead to enhanced operational performance of the organization. Therefore, based on this research finding how much is the influence of implementation of supply chain practices on operational performance of the EAP Plc was tested.

CHAPTER THREE: RESEARCH METHODS

3.1 Introduction

This part describes the methodologies that were used in this study, the choice of particular research designs, sampling techniques, sources of data and data collection tools along with an appropriate justification associate with each approach.

3.2 Research Design

The study investigated SCM practices and performance based on fundamental theories, principles and management philosophies that are supposed to be effective parameters just to evaluate the actual performance of the case company's key business activities. Accordingly, the case company's existing SCM practices, performance and the challenges that prohibit its effectiveness were evaluated. That means the purpose of the research is to find out the underlying facts and /or actual circumstances existing within the case company with regard to SCM practices and describing the facts. Therefore, the researcher used descriptive research type, which helps to use both qualitative and quantitative data analysis.

Descriptive and causal research design was used in this particular study. Descriptive research design was used in order to understand and systematically examine the implementation level of company's existing SCM practices, performance and the challenges that prohibit its effectiveness. More so, a descriptive study was conducted in order to ascertain and be able to describe the characteristics of the variables of interest in a situation. The design was used to identify the most influential variables that affect SCM performance and its relationship with operational performance. A causal research design can be used for studying a cause and effect relationship between dependent and independent variables and regression analysis (whether simple or multiple) is termed as causal analysis between two or more variables. In quantitative studies, researchers advance the relationship among variables and pose this in terms of questions or hypotheses. Quantitative research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. A case study method can deploy cross sectional data collection technique in a given organization or organizations (Kothari 2004). Hence, the study chosen to use Multiple Regression to analyze cause-effect relationship

of variables and it also used descriptive statistics to discover issues that would not be covered by the regression model. Different literatures and empirical studies were reviewed to gain more insights and background information with regard to performance and SCM practices of EAP Plc.

3.3 Research Approach

Both quantitative and qualitative study approach was conducted in order investigate the company SC coordination role, practice and challenges aligning with the relationship with operational performance of the organization. Quantitative research technique was employed in order to obtain the supply chain and logistics team perceptions on logistics coordination and supply chain practices in the organization. Qualitative research method allows organizing and analysing the opinions of respondents on the SCM practice and performance challenges.

According to Creswell (2013), mixed research method is suitable for the development of concepts which help us to understand social phenomena in natural (rather than experimental) settings, giving due emphasis to the meanings, experiences and views of the participants. It is generally used to gain an understanding of underlying reasons as well as to uncover the implementation of supply chain management performance challenges, practices and their effect on the performance as well as to find answers to the research problem.

Questionnaire was employed as a data collection method. Information was collected from the logistics, procurement and supply chain department and those who provide related service to the program. Therefore, employees of EAP plc staff who are engaged in supply chain management and logistics activities and the permanent customers were included in the data collection process.

3.4 Population

According to Alan S. Kaufman and Nadeen L. Kaufman, (2005), population is a group of individuals, objects, items or an entire group of persons or elements that have at least one thing in common. The target population of this study was the one hundred seventy (170) in total; One hundred fifty (150) from the company employees, who are directly or indirectly involved in the supply chain management and twenty (20) from EAP Plc's permanent customers (wholesalers) who signed a contract agreement with the company since the company establishment. The

population is selected based on its reliability for the sources of data required and its convenience for data collection.

The researcher was employing a census method; Census method is the method of statistical enumeration where all members of the population are studied. A population refers to the set of all observations under concern. By doing so, everyone has an opportunity to participate, and it use to obtain reliable and accurate information than sampling. Conducting a census can be very time-consuming and costly. However, the advantage is that it allows the researcher to gain accurate information (John W. Creswell, 2009). The study was targeted both internal and external player which were engaged in the company SCM activity by taking the data from Human Resource management and contract administration department of EAP Plc.

The targeted population for the study comprised as of below table 3.1.

Table 3.1: Number of target population

Category	Department	Population
Internal	Production	20
Internal	Logistics & supply chain	54
Internal	Finance	6
Internal	Quality Control	15
Internal	Marketing	45
Internal	HR & Administration	10
External	Customers	20

Source: *Survey Data, 2020*

3.5 Types and Sources of Data

To achieve the specified objective, both primary and secondary data sources were used. The primary data was collected from respondents who are related to the program or supply chain management activity and logistics through questionnaire designed by the researcher. They include production department, SCM and logistics department, marketing department, finance and warehouse department employees and customers of EAP Plc. In addition to the primary data, secondary data was gathered from published and unpublished sources.

3.6 Data Collection Tools

There are two sources of data namely, primary and secondary source. In this research, both primary and secondary sources of data were utilized through Questionnaires, and literature review. The questionnaires had been distributed to selected employees of the company and customers of EAP Plc. As the secondary data; books, articles, journals, magazines, and brochures were reviewed.

In order to meet the objective of the study, questionnaires were prepared based on the survey of different literature. These were empirical literature where the researcher used and the questionnaire was implemented by modifying to the case company context.

The information was collected using self-administered questionnaires. The tool was also structured and the questionnaires were in form of a five point Likert scale. It also consisted of both open and closed ended questions. The questionnaire had four sections. Section A asked questions on general information of the respondents. Section B sought information on the extent to which state the company practices of SCM. In section C, questionnaires were on effects of SCM practice on performance in EAP Plc, while Section D sought answers to challenges of SCM practice in the company. The questionnaires were designed to elicit responses for both qualitative and quantitative analysis. A drop and pick later method was used to administer them. An introductory letter (Appendix I) accompanied the questionnaires.

John W. Creswell (2009) suggests that pre-testing allows errors to be discovered. Expert validity views and suggestions of the advisor initially incorporated in the questionnaire and Pre-testing was conducted on 5 respondents to increase the validity of the responses; however, these respondents were not included in the study. As a result of the pilot test, changes in department selection and instructions were made to the questionnaire. Regular cross-checking and follow ups were conducted to ensure accuracy, relevance, completeness, consistency and uniformity of the data collect. The questionnaires were administered using drop and pick later method with a time lapse of one month with a view to enhance the response rate. For the purpose of simplicity and understandability of the questionnaire to all respondents and to get valid answer for the questions, the researcher was prepared questionnaires in English.

3.7 Reliability and Validity test

3.7.1 Assessment of Intra-rater reliability

According to Anders Jonsson and Gunilla Svingby, 2007, reliability analysis is concerned with the internal consistency of the research instrument. Cronbach's alpha was used to measure the reliability of the individual sub constructs that affect the supply chain performance of the EAP Plc. Most of the studies investigating intra-rater reliability by using Cronbach's alpha to estimate raters' consistency, and the majority report on alpha values above .70, which, according to Glasswell, and Harland cited on Anders Jonsson and Gunilla Svingby (2007) is generally considered sufficient. Multiple items in all constructs were used. The internal consistency/reliabilities (Cronbach's α) of the sub-constructs; strategic supplier partnership, contract management, information sharing and SCM performance. Moreover, as we can see in the following table the internal consistency of the research instrument for further analysis.

Table 3.2 Computed reliabilities of the sub-constructs studied

Sub-constructs Variable	No of Items	Total Correlation	Cronbach's Alpha
Strategic supplier partnership	8	.697	.854
Contract management practice	5	.603	.812
Information sharing practice	6	.781	.882
Supply chain management performance	4	.862	.775
Case Summary	27		.871

A commonly used value for acceptable reliability is 0.70 (Hair et al., 1998). More measures that are reliable give greater confidence that the individual indicators are all consistent in their measurements, and therefore, the model is repeatable. The respective results found in this study show such strong indication towards the internal consistency of the study approach, which in turn ensures repeatability of the method adopted in this research work.

3.7.2 Analysis of Validity

Compbell, 1960 identified the most commonly used methods for demonstrating validity are referred to as content-related, criterion related, & construct related validity. Validity refers to the test or measurement strategy measures and how well it does so. This study addressed content

validity through the review of literature and adapting instruments used in previous research. It refers to the relevance of the instrument or measurement strategy to the construct being measured (Fitzpatrick, 1983). On the other hand (Groth-Marnat, 2003) define content validity the extent to which the test or measurement strategy measures a theoretical construct or trait.

3.8 Measures of Variables

There are different types of variable depending on the type of research and data analysis. For this study purpose, the researcher designed the dependent and independent variables. According to (Neuman, 2007), the variable that is the effect or is the result or outcome of another variable is the dependent variable. The independent variable is the causes of the result, whereas the dependent variable depends on the cause. For this research, SCM practices, i.e. strategic supplier partnership, information sharing and contract management practices are independent variables, while supply chain performance is dependent variable. The dependent variables are the measurements or indicators of SCM performance: Time: - Customer Response Time and In/On Time Delivery, Cost: - purchasing/ sourcing costs associated with sourcing products from an upstream member of a supply chain and Quality: - quality of delivered goods in meeting the needs and expectations of customers. Each variable has been addressed by valuable questions.

The variables were measured using a 5-point Likert scale to quantitatively measure the variables of SCM which affects the performance of EAP and come up with reliable findings. This ranged from strongly disagree to strongly agree (namely strongly disagree, disagree, neutral, agree, and strongly agree).

The numbers in the ordinal scale represented relative position or order among the variables (Mugenda and Mugenda, 2003). The ordinal scale of measurement was applied to cases which had some common characteristics such as sex, age, work experience and levels of education, among others. In nominal measurement of variables, numbers were assigned only for the purposes of identification, but were not allowed for comparison of the variables to be measured. On the other hand, interval scales of measurement were used to capture personal data of respondents.

3.9 Data Analysis and Data Presentation

To analyze the data both quantitative and qualitative techniques were used. Open ended questionnaires concerning on the challenges of supply chain management practices and performances of EAP plc provided qualitative information was collected from the respondent opinions were grouped, summarized and analyzed by giving priority of their major response.

The quantitative data was analyzed by using Statistical Packages for the Social Sciences (SPSS). After the raw data is collected, the responses are coded and entered into SPSS version 21 for inferential statistical data analysis. Descriptive statistics, such as, percentage, frequency and standard deviation were used in summarizing the research findings on the extent to which SC management is practiced.

In this research, Pearson coefficient of correlation test was used to investigate the association between SCM practice and performance of the company. Furthermore, multiple regression analysis was employed to investigate the relationship between the independent variable i.e. Supply chain Management practice with its effect on the dependent variables performance of the company. This can be expressed by the model below to determine the quantitative association between the variables:

$$Y = b_0 + b_1X_1 + b_2 X_2 + b_3X_3 + \varepsilon$$

Where;

b_0 = Constant

Y= SCM Performance; (SCMP)

X_1 = Strategic Supplier Partnership; (SSPS)

X_2 = Contract Management Practice; (CMP)

X_3 = Information Sharing practice; (ISP)

b_i = Coefficients of regression (slope) for the independent variables X_i (for $i = 1,2,3$)

ε = Residuals (error term)

The dependent variable (Y) i.e. supply chain management performance was measured by measuring the degree to which the effective implementation of supply chain practices of EAP is

affected by independent variables (X) such as the Strategic Supplier Relationship; (X1), Information Sharing; (X2) and Contract Management; (X3).

The study also used tables, graphs and charts form to present the result.

4.0 Ethical Consideration

Each discipline should have its own ethical guidelines regarding the treatment of human research participants (Vanderstoep and Johnston, 2009). Research ethics deal with how we treat those who participate in our studies and how we handle the data after we collect them. The researcher had kept privacy (that left any personal questions), anonymity (protecting the identity of specific individuals from being known) and confidentiality or keeps the information confidential (Saunders et.al, 2007). In addition, the questionnaire distributing to voluntary participants and have a clear introduction and instruction parts regarding the purpose of the research.

CHAPTER FOUR: DATA ANALYSIS, INTERPRETATION AND DISCUSSIONS

4.1 Introduction

This study assesses factors affecting supply chain management performance at EAP Plc. This chapter presents the results of the data collection via questionnaire dissemination. In the following sections, the reliability and validity of the assessment made and various aspects of the data collected are presented. This includes demographic data, supply chain practice implementation levels in terms of identified independent and dependent variables. The data analysis presentation is based on SPSS analysis of the gathered data.

4.1.2 Response Rate

The study targeted the East Africa Pharmaceutical Plc. heads of departments/work units, junior and mid-level managers, suppliers and customers of the company. The response rate was as displayed in the Table 4.2.

Table 4.2: Response Rate

Category	Frequency	Percentage
Response	156	91.8
Non-response	14	8.2
Total	170	100

Source: Research Data (2020)

The results in Table 4.2 show that out of 170 questionnaires administered 156 responded giving a response rate of 91.8 percent while those respondents who failed to respond accounted for 8.2 percent. According to Mugenda and Mugenda (2003), a response rate of 50 percent is adequate for analysis and reporting rate of 60 percent is good and a response rate of 70 percent and above is excellent. Based on this assertion, the overall response rate of 91.8 percent was practiced satisfactory to make conclusions for the study as it acted as a representative.

4.2 Demographic Profile

The demographic and general information of the study was based on the respondents' gender, age, work experience, work unit/department and respondents' higher level of education. The findings obtained are presented as follows:

4.2.1 Gender

Table 4.3: Respondents' Gender

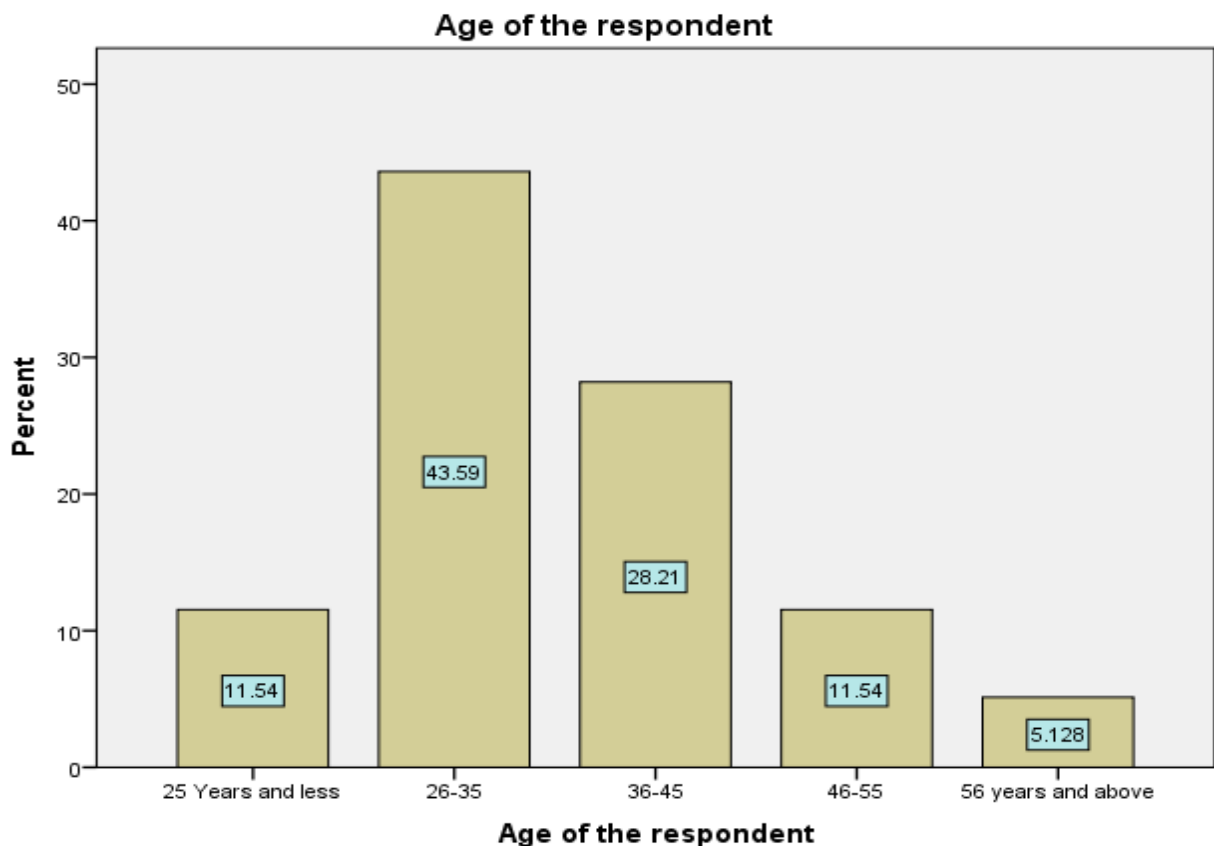
Gender	Frequency	Percent	Cumulative Percent
Male	86	55.2	55.1
Female	70	44.8	100.0
Total	156	100.0	

Source: Research Data (2020)

Table 4.3 shows that majority (55.2 percent) of the respondents were male and 44.8 percent were female. These findings show that both genders were proportionally or almost equivalent involved in this study and thus the findings of the study did not suffer from gender biasness.

4.2.2 Age of respondents

Figure 4.1: Respondents' Age



Source: Research Data (2020)

The results in figure 4.1 show that, majority 68 (43.6 percent) of the respondents were aged between 26 to 35 years old. 44 (28.2 percent) of the respondents were aged between 36 to 45 years old. Age below 25 years old also aged between 46 to 55 accounted 11.5 percent respectively and very few (8 percent) respondents was age above 56 years old. The cumulative frequency of 83 percent indicates that majority of the respondents were aged 45 years and below. These findings show that the respondents who were engaged in the study cut across different age gaps.

4.2.3 Department /Work Unit/ of Respondents

The study found it essential to establish on the area of operation or work unit of the respondents on their organization. This data was intended for the purpose of establishing on the respondent awareness and level of understanding over the operational and organizational strategies.

Table 4.4: Department of Respondents

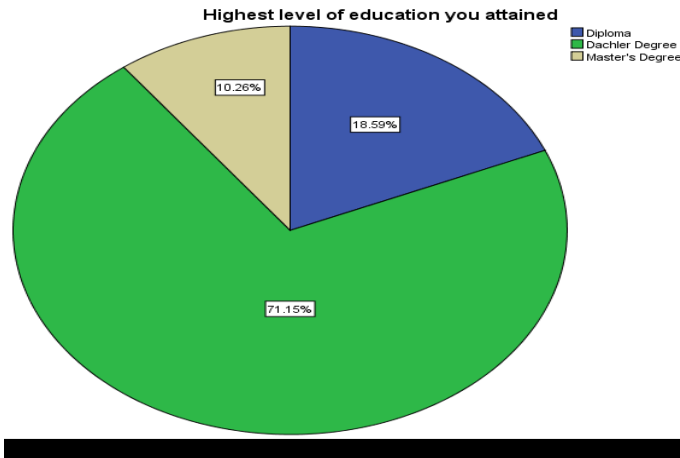
Departments	Frequency	Percent	Cumulative Percent
Production	23	14.7	14.7
Quality	23	14.7	29.5
Logistics & SCM	53	34.0	63.5
Administration	9	5.8	69.2
Marketing	41	26.3	95.5
Finance	7	4.4	100.0
Total	156	100.0	

Source: Research Data (2020)

The table 4.4; shows that majority 53(34percent) respondents was from SCM and logistic department, 41 (26.3percent) from marketing department, 14.7percent from production department, 14.7percent from quality department, some respondents, 5.8percent from administration department and few 4.4percent from finance department or work unit. With this kind of distribution, the researcher was satisfied that all areas were covered to obtain reliable information.

4.2.4 Educational Level

Figure 4.2: Respondents' Educational Level



Source: Research Data (2020)

The results in figure 4.2 show that majority (71.2percent) of the respondents had attained a bachelor degree level of education, (10.3percent) respondents attained a Master’s Degree and (18.6percent) respondents were attained a Diploma level of education. This is an indication the respondents are well educated to understand what is happening in the organization, hence able to provide the right information. The result shows that majority of the employees are well educated and thus understand the supply chain management practices and its contribution for supply chain management performance in EAP Plc.

4.2.5 Length of service in current position

Figure 4.3: Distribution of Respondents by length of service

Years of Experience	Frequency	Percent
Less than 2 years	27	17.3
2-5 years	64	41.0
6-10 Years	52	33.3
Over 10 Years	13	8.3
Total	156	100.0

Source: Research Data (2020)

The results in Figure 4.7 shows that majority (41.0percent) of the respondents had a work experience of between 2 to 5 years on their current position, (33.3percent) from 6 to 10 years,

(17.3percent) 2 years and less, and few respondents (8.3percent) had more than 10 year work experience on their current position. This implies that majority of the respondents had worked with the company for a considerable period and thus they were in a position to give credible information relating to this study.

4.3 The current level of supply chain management practices on the supply chain management performance

The descriptive analysis has been done according to the research questions of the study mentioned earlier. It deals with an assessment of the supply chain management practices, determining the effect of analyzed by using inferential statistics multiple regression and correlation and the challenges of supply chain management performance within the company has been analyzed. Accordingly, the findings and discussions of the study are presented as follows.

4.3.1 The Implementation level of SCM practices

The first research question has focused on evaluating the implementation level of SCM practices in EAP Plc. The perception of respondents on each of the supply chain practices was described in terms of strategic supplier partnership, contract management, information sharing, and supply chain performance variables and asked to rate their levels of agreement with various statements on a scale of 1 – 5 where; 1 was strongly disagree and 5 was strongly agree. The summary statistics of the responses are provided in Table 4.5.

Table 4.5: Means of the level of Implementation of Supply chain management practices

	N	Mean	Std. Deviation
Customers receive goods and services at the right quality, quantity, time& place	156	3.71	1.184
Suppliers have become part of the company	156	3.61	1.210
The company has manageable suppliers	156	3.57	1.102
The suppliers understand well the requirements of the company	156	3.51	1.238
The suppliers deliver quality goods and products	156	3.46	1.240
There is shorter lead time towards service delivery	156	3.26	1.196

Outsourced services are excellently performed	156	3.25	1.139
There is Increased capacity to offer services to customers	156	3.20	1.177
There is efficient internal communication	156	3.12	1.223
Exchange of information between suppliers and the company is reliable	156	2.97	1.203
There is an automated ordering system to major suppliers	156	2.91	1.217
There is adequacy of IT systems throughout the supply chain	156	2.80	1.190
There is joint planning between customers and suppliers	156	2.45	1.229
Suppliers have helped the company in preparation of specifications	156	2.48	1.215
Suppliers are informed of the need to supply recyclable goods	156	2.59	1.066
Selection of supplier conducted under consideration of environmental issue	156	2.45	1.159
Data is shared between the company and the suppliers to enhance productivity	156	2.42	1.212
The environmental policy has been implemented within the company	156	2.48	1.136

Source: Research data (2020)

From the above, the following SCM practices have been adopted to a great extent (mean lies between 3.51 and 5): Customers receive goods and services at the right quality, quantity, time& place (mean, 3.71), Suppliers have become part of the company (mean, 3.61), manageable suppliers (mean, 3.57), and suppliers understand well the requirements of the company (mean, 3.51).

The following SCM practices have been implemented to a moderate extent (mean lies between 2.51 and 3.5): supplier deliver quality goods and products (mean, 3.46), shorter lead time towards service delivery (mean, 3.26), Quality outsourced services (mean, 3.25), Increased capacity to offer services to customers (mean, 3.20), Exchange of information between suppliers and the company (mean, 2.98), efficient internal communication (mean, 3.12), automated ordering system to major suppliers (mean, 2.91), adequacy of IT systems throughout the supply chain (mean, 2.80), Suppliers are informed of the need to supply recyclable goods (mean, 2.58), and Data is shared between the company and the suppliers (mean, 2.52), .

Only the remaining four statements, Suppliers have helped the company in preparation of specifications (mean, 2.48), consideration of environmental issue (mean, 2.45), joint planning between customers and suppliers (mean, 2.45), and environmental policy has been implemented (mean, 2.48) had been implemented to a small extent.

These findings indicate that while some of SCM best practices have been adopted and implemented to a great extent, majority of the practices have been implemented to a moderate extent. Further, few numbers of the practices, i.e., Suppliers have helped the company in preparation of specifications, consideration of environmental issue, joint planning between customers and suppliers, and environmental policy implementation are still lacking behind and implemented in small extent. These findings imply that EAP plc still have lots of ground to cover in terms of fully implementing supply chain best practices.

4.3.2 Challenges impeding adoption of SCM practices

The second objective of the study sought to identify the main challenges impeding the adoption of SCM practices and hindered the SCM operational performance of EAP plc. The respondents were asked to indicate what they perceived to be the supply chain problems as a general in the company. The following supply chain problems were identified and summaries as follow:

Scarcity of local supplier base was a big challenge for the company with the current foreign currency shortage all over the country. This seriously affected EAP's supply chain management performance by taking longer time to deliver products.

Lack of communication is also mentioned by major respondents as one of the common supply chain management challenges of EAP plc. Sometimes suppliers may not deliver the right quality after their technical proposal is validated which had serious effect on the supply chain performance.

Lack of clearly defined specifications/requirements with detailed technical specification to ensure suppliers to participate and provide the right product to the tenders floated were mentioned as major challenge.

Another major challenge to SCM performance was the delivery time promised to customer hardly achieved: Due to variations in supply and implementation problems promised delivery date and quantity to customers were rarely achieved.

4.4 The relationship between Supply Chain Management Practices and Performance

The third objective of study sought to examine the relationship between various SCM practices and performance of EAP plc. Pearson correlation analysis was conducted to identify the linear relationship SCM practices includes, strategic supplier partnership (SSP), contract management (CM) and information sharing (IS) with the SCM operational performance of EAP Plc. All basic constructs were included into the correlation analysis and a bivariate two tailed correlation analysis was done. The findings are as shown in the subsequent section (Table 4.6).

Table 4.6: Pearson Correlations Matrix

		SSP	IS	CM	OP
SSP	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	156			
IS	Pearson Correlation	.872**	1		
	Sig. (2-tailed)	.000			
	N	156	156		
CM	Pearson Correlation	.829**	.593**	1	
	Sig. (2-tailed)	.000	.000		
	N	156	156	156	
OP	Pearson Correlation	.806**	.692**	.815**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	156	156	156	156

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Survey result, 2020

As showed in table 4.6, Pearson product moment correlation coefficient (r) was used to determine the strength of relationship between the dependent variable SCM operational performance (OP) and the independent variables; Strategic supplier partnership (SSP), Information sharing (IS), and Contract management (CMP).

It is a parametric technique, which gives a measure of the strength of association between two variables. Correlation is an effect size and so we can verbally describe the strength of the correlation using the guide that Evans (1996) suggests for the absolute value of $r = .00-.19$ “very weak”, $.20 - .39$ “weak”, $.40 - .59$ “moderate”, $.60 - .79$ “strong” and $.80 - 1.0$ “very strong.

As it can be shown in the above correlation matrix, each variable is perfectly correlated with itself and so $r=1$ along the diagonal of the table. The SCM operational performance (OP) is positively and very strongly related to strategic supplier partnership (SSP) with a Pearson correlation coefficient of $r = 0.806$, $p < 0.01$, Information sharing (IS), $r = 0.692$ strongly related with the SCMP and the Contract management practice (CM) also positive and very strongly related with $r = 0.815$.

4.4.1 Assessment of Ordinary Least Square Assumptions

Before using multiple regressions, part of the process involves checking to make sure that, the data can actually be analyzed using multiple regressions. Therefore, it is important to do because it is only appropriate to use multiple regressions if the data "satisfies" five assumptions that are required for multiple regressions to give us a valid result (Annex 2).

4.4.2 The Regression Results and Hypothesis Testing

4.4.2.1 Regression Results

The multiple liner regression result that were obtained by regressing the company operational performance (OP) dependent variable on the SCM practice dimensions of strategic supplier partnership practice (SSPS), contract management practices (CM), and practice of information sharing (IS) were analyze and reported. Finally, the hypothesis tests were undertaken based on the proposed hypothesis and the regression output results are as shown in the subsequent section.

Table 4.7: Regression Model summary

Model	r	R ²	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.865 ^a	.748	.743	.33336	1.911
a. Predictors: (Constant), Information sharing practice, Strategic supplier partnership, Contract management practice					
b. Dependent Variable: Operational performance					

Source: Survey result, 2020

R-squared measures the strength of the relationship between the model and the dependent variable on a convenient 0 – 100% scale.

The R-squared value .748 is the square of the correlation (r). It measures the proportion of variation in the dependent variable that can be attributed to the independent variable.

The adjusted R-squared is a modified version of R-squared that has been adjusted for the number of predictors in the model. The adjusted R-squared increases only if the new term improves the model more than would be expected by chance. It decreases when a predictor improves the model by less than expected by chance.

According to the above regression analysis model summary table, SCM practices have strong positive linear relationship with operational performance with the r-value of 0.865 and the adjusted R Square value depicted that, 74.8 percent of the total variability in operational performance is explained by supply chain management practices.

Table 4.8: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	50.082	3	16.694	150.225	.000 ^b
	Residual	16.891	152	.111		
	Total	66.974	155			
a. Dependent Variable: Operational performance						
b. Predictors: (Constant), Effective contract management, Information sharing, Strategic supplier partnership						

Source: Survey result, 2020

Table 4.8, presented the ANOVA report on the general significance of the model. As p is less than 0.05, the model is significant by the values of F-statistics (p = 0.000) and (F=150.225). Thus, the combination of the independent variables, strategic supplier partnership practice

(SSPS), contract management practices (CMP), and practice of information sharing (ISP) with supply chain management performance (SCMP) significantly predict and are at best fit to model to predict the dependent variable operational performance (OP).

Table 4.9: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.482	.142		3.407	.001
	Strategic supplier partnership	.425	.093	.469	4.560	.000
	Information sharing practice	.370	.078	.390	4.723	.000
	Contract management practice	.044	.062	.046	.704	.483

a. Dependent Variable: Operational performance

Source: Survey result, 2020

The above coefficient matrix table tells us about the relationship between independent variables (SCM practices) and dependent variables (operational performance). By default the null hypothesis for t test in the regression analysis is that the coefficient in the independent variables is zero or the independent variable does not help the dependent variable.

From the above regression analysis table we can see that, the p value for strategic supplier partnership (SSP) and information sharing (IS) is less 0.05, the standardized regression coefficient 0.425, and 0.370 at $p < .05$, respectively and the contract management (CM) value of regression coefficient 0.044 at $p > .05$.

Thus, from the above findings the model for predicting operational performance (OP) becomes:

$$OP = .482 + 0.425SSP + 0.370IS + 0.044CM + e$$

Where: **OP** = Operational Performance, **SSP** = Strategic Supplier Partnership, **CM** = Contract Management and **IS** = Information Sharing,

4.4.2.2 Hypothesis Testing

The regression analysis whose results are in the regression model provides a more comprehensive and accurate examination of the research hypothesis. Therefore, the regression results obtained from the model were utilized to test these hypotheses. The following hypotheses test were conducted based on the regression results of strategic supplier partnership practice (SSP), contract management (CM), and information sharing (IS) on the operational Performance in EAP Company obtained from the regression output.

H1: Strategic supplier partnership factors affect the operational performance of EAP Company

The first hypothesis of this research posted that the strategic supplier partnership factors significantly affecting affect the operational Performance in EAP Company. These results demonstrate that there is a strongly correlated relationship between the strategic supplier partnership with the level of operational Performance, the positive beta sign and a statistically significant and result of strategic supplier partnership had the highest beta value of ($\beta = 0.425$, $t = 4.56$, $P < 0.05$) which would affect the criterion variable the most. Thus this hypothesis was strongly supported by the regression result as results the proposed hypothesis as acceptable.

H2: Information sharing factors affect the operational performance of EAP Company

The second hypothesis of this research revealed that the information sharing factors significantly affecting the Performance in EAP Company. These results demonstrate that there is a strongly correlated relationship between the information sharing with the level of Supply Chain Management Performance, the positive beta sign and a statistically significant and the result of information sharing had a higher beta value of ($\beta = 0.370$, $t = 4.723$, $P < 0.05$) which would affect the criterion variable the most. Therefore, this hypothesis was strongly supported by the regression result as results the proposed hypothesis as acceptable.

H4: Effective Contract management factors affect the operational performance of EAP Company

The last hypothesis of this research discovered that the contract management factors significantly affecting the operational Performance in EAP Company. These results demonstrate that there is a positively correlated relationship between the contract management with the level of operational Performance, the positive beta sign and a statistically not significant and the result of contract management had the lowest beta value of ($\beta = 0.044$, $t = 0.704$, $P > 0.05$) which would affect the criterion variable the most. Therefore, this hypothesis was not supported by the regression result as a result the proposed hypothesis is rejected as we have strong reason to reject the null, and accept alternative hypothesis.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of findings, conclusions and recommendations. It is organized as follows: first, it presents the summary of findings organized as per research objectives, then the conclusions drawn from those findings and finally presents the recommendations and suggestions for further study.

5.2 Summary of Findings

The study was guided by three specific objectives: to assess the implementation level of supply chain management practices of EAP Plc, to identify the challenges of SCM practice in EAP Plc and to determine the relationship between SCM practices in terms of strategic supplier partnership, information sharing and contract management practices on SCM performance. The following were the summaries of major findings obtained from the data analysis.

Regarding SCM practices, it was found that while some of SCM best practices had been adopted and implemented to a great extent, majority of the practices have been implemented to a moderate extent and Supplier's participation in preparation of specifications, consideration of environmental issue during supplier selection, joint planning between customers and suppliers and environmental policy implementation practices are still lacks behind and implemented in small extent.

As mentioned in the literature review section, advantages of supplier participation in new product specification development reduced costs (Kessler, 2000; Clark, 1989), and improved perceived product quality (McGinnis, 1997). Strategic partnership between organizations promote shared benefits and ongoing collaboration in key strategic areas like technology, products, and market (Yoshino and Rangan, 1995; Thatte, 2007). Thatte (2007) stated that strategic supplier partnership as the long-term relationship between the organization and its supplier has significant advantage.

Involving supplier early in new product specification development process can lead suppliers to offer cost effective product alternatives, assist in selecting better components and technologies

(Tan et al, 2002; Thatte, 2007). However, it is possible to conclude that EAP plc relies much upon traditional way of doing business and less attention is paid to modern supplier partnership practices and green supply chain practices such as, including their key suppliers in their planning and goal- setting activities, considering the environmental issues as a criterion for supplier selection, and helping their suppliers to improve their product quality.

The result implied that lack of a need to develop closer relationships with key suppliers who can provide the expertise necessary to develop innovative new products and successfully bring them to market. Significant benefits are possible from better managing relationships with key suppliers. It has been shown that integration of operations with suppliers can improve firm performance (Swink, 2007; Singh & Power, 2009).

Regarding the relationship between SCM practices in terms of strategic supplier partnership, information sharing and contract management practices and the supply chain management performance, all the three independent variables were found to have statistically significant and positive relationships with the supply chain management performance of EAP plc. Strategic partnership with suppliers enables organizations to work more effectively with a few important suppliers who are willing to share responsibility for the success of the products (Anderson and Katz, 1998; Li et al., 2006). Strategic supplier partnership in SCM has been reported to yield organization-specific benefits in term of financial performance. Vereecke and Muylee (2006) highlighted that strategic partnerships with suppliers have a significant impact on supply chain performance and various aspects of competitive advantage.

In addition to this the first two variables, namely strategic supplier partnership and information sharing practices were found to have strong relationships with the supply chain management performance than that of the contract management practices.

Finally, various setbacks face the EAP plc in the performance of supply chain management. These include: low levels of support from top management, lack of communication, inadequate end user cooperation and understanding on issues relating to procurement, low compliance among suppliers to the Environmental Management Act and policies.

The other big challenge for the company stated by major respondent was the foreign currency shortage. This seriously affected EAP's supply chain management performance by taking longer

time to deliver products. And lastly mentioned challenge was the delivery time promised to customer hardly achieved. Due to variations in supply and implementation problems promised delivery date and quantity to customers were rarely achieved.

5.3 Conclusions

As discussed in the previous chapters, this research is carried out to assess the supply chain management and performance (SCMP) taking the case of East African Pharmaceuticals P.L.C. To answer the stated specific objectives, the company supply chain practices were assessed. To that effect, after reviewing different literatures and previous studies, a research frame work was designed and factors affecting supply chain management performance were identified. The level of supply chain practice, strategic supplier partnership information sharing and the contract management practice which affect the supply chain performance; namely, delivery in/on time, customer response time, right quality and low cost/price were analyzed.

Based on the above findings, the following conclusions have been drawn:

First, EAP plc has adopted several SCM best practices to a great extent and a moderate extent. Few of SCM best practices also adapted to a small extent, this leaves a gap in the effective implementation of SCM practices. The main practices still yet to be fully implemented include: Supplier's participation in preparation of specifications, consideration of environmental issue during supplier selection, joint planning between customers and suppliers and environmental policy implementation practices. Therefore, from the result it is possible to conclude that the supply chain management practice was implemented moderately in EAP plc.

Secondly, the study concludes that strategic supplier partnership and the information sharing practices with in the EAP plc affects their supply chain management performance significantly. The study also deduces that contract management systems affect supply chain management performance of EAP plc and finally it also concluded that the EAP plc has a satisfactory performance of supply chain management.

Thirdly, the study concluded that the company faces a number of challenges in their implementation of SCM practices and its performance. These include: lack of communication, low levels of support from top management, the foreign currency shortage, and the delivery time promised to customer and low compliance among suppliers to the Environmental Management Act and policies.

5.4 Limitation and Implications for Further Research

While those results are valuable, the limitations of this study must also be considered. Potential limitations of this research are not considering the responses of the other tier supply chain members i.e. suppliers and all available customers, only taking the operational performance as the performance measures, and not considering the other contextual factors i.e. type of industry, firm size and supply chain length. In addition, majority of the data for the study only consisted of responses from single respondents in an organization, which may be a cause for possible response bias. Therefore, the results have to be interpreted considering this limitation. Future studies can examine the proposed relationships by bringing some contextual variables and additional dimensions into the model in order to fill the observed gap such as geographical proximity, JIT/lean capability, cross-functional coordination, logistics integration, and agreed supply chain leadership, which have been ignored from this study. The future study can also test the relationships/dependencies among dimensions of SCM practices.

However, by validating a multi-dimensional operational measure of the construct of SCM practice and by demonstrating its efficacy with operational performance, the present study provides important insights for EAP management. It can be used as the useful tool for evaluating the strength and weakness of the current SCM practices of the organization. This study also provides empirical evidence to support conceptual and prescriptive statements in the literature regarding the impact of SCM practices.

The present study used only private limited company; future studies should consider expanding their scope to include other public fund institutions.

5.4 Recommendation

From the above conclusions, some recommendations are proposed to alleviate the problems encountered.

- Today the pharmaceutical manufacturing focus is not only on the single company, rather the overall value chain starting from the raw materials suppliers to the ultimate customers. To be competitive, long term relationship throughout the supply chain is fundamental. EAP does not have long-term relationship with internal and external suppliers. So, the company can

select its suppliers from those performing best currently and build long term relationship and can be competitive in the market.

- The company should strengthen their supply chain management by putting greater effort to the implementation of some key best practices. Specifically, the following green supply chain practices should be improved on prequalification of suppliers that are aware of environmental Issues, preparation of specifications with Suppliers, procurement of recyclable Material, and Involvement of key suppliers in planning.
- EAP's expired and unused raw materials and medicine should be stored in a way that they could not harm human and environmental health must be disposed in line with the consideration of green supply chain principles.
- Due to different factors, the order fulfillment lead time of raw materials is too long. To reduce the order fulfillment lead time of raw materials, the company shall discuss with relevant stakeholders like banks to get foreign currency, Ethiopian shipping lines the current multimodal transport agency to facilitate transportation, and the customs authority by clearly identifying list of raw materials that are tax exempted to reduce unnecessary delay.
- There are no information sharing experiences with its suppliers and distributors. Since information is vital throughout the supply chain for making decisions timely, introducing system to collect, analyze and disseminate information with its customers are vital. The information system shall be accessible and use friendly by its customers.
- The result also shows that there is no direct on-time delivery for most its customers (wholesalers). Since on-time deliveries to customers' point of use are preferred by most of the customers, direct on-time delivery to its customers by buying delivery vans is recommended. Also outsourcing the delivery service for best performing transportation agents can be used others core competencies.
- The Marketing department of the case company is recommended to improve the relationship with customers through a continuous information sharing, follow-up and getting feedback, monitoring customers' perceptions towards service of the company, improving its compliant management through conducting market research.
- The human resource is the essential factor that performs all activities to make Supply Chain Management effective and efficient. As competition is stiff, having skilled and alert

manpower is mandatory. So, EAP plc is advised to prepare training program for its employees and managers in order to enable them to be competent, committed, and responsive and finally improve internal operation and customer's service through creating relationship with training institutions, strengthening the internal human resource department, designing & implementing internal capacity building program and hiring competent work force from the market.

References

- Adams, J, Khan, Hafiz T.A., Rae (2007). *Research Methods for Graduate Business and Social Science Students*. New Delhi: SAGE. Available from: www.bookzz.org. [Dec 23 2017].
- Admaw Anley, (2010). Impact of Supply Chain Management Practices on Competitive Positioning of Ethiopian Textile Firms. Unpublished Master's Thesis, University of South Africa.
- Alvarado UY, Kotzab H., 2001, Supply chain management: the integration of logistics in marketing. *Industrial Marketing Management* 30(2):183–98.
- Anderson, M. G.; Katz, P. B. (1998) Strategic sourcing, *International Journal of Logistics Management*, v. 9, n. 1, p. 1-13,
- Asamoah D., Annan J. and Nyarko S. (2012). AHP Approach for Supplier Evaluation and Selection in a Pharmaceutical Manufacturing Firm in Ghana. *International Journal of Business and Management*, 7(10), 50-62.
- Assefa, 2011. Study on supply chain management practices-a case study of Kality food Share Company. MBA. Ethiopia: Addis Ababa University.
- Ayers J. Handbook of supply chain management [Journal] // St. Lucie Press and APICS. - 2006.
- Ayman Bahjat Abdallah, Bader Yousef Obedidat and nor Osama Aqqad, 2014, The impact of supply chain management practices on supply chain performance in Jordan: he moderating Effect of competitive intensity. *International Business Research* Vol.7 NO.3
- Babbar S., & Prasad S. International purchasing, inventory management and logistics research: An assessment and agenda [Journal]. - [s.l.]: *International Journal of Operations and Production Management*, 1998. - 1: Vol. 18.
- Bechtel C. and Jayaram J. Supply chain management: A strategic perspective [Report]. - [s.l.]: *The International Journal of Logistics Management*, 1997.
- Birtukan T., (2014) Prospect and challenges of supply chain Management in ethiotelecom, ST. Mary University
- Blanchard D. Supply Chain Management Best Practices [Book]. - New Jersey : John Wiley & Sons, Inc., 2010. - Vol. 2.
- Bowersox D. J., Closs D. J., Cooper M. B., (2010) *Supply Chain Logistics Management*, 3rd Edition: New York: McGraw-Hill.
- Bowersox D.J., Closs D.J. & Cooper M.B. (2007) *Supply chain logistics management*, 2nd edition: New York: McGraw-Hill,

- Bowersox, D. J. et al, 2000. Ten Mega-Trends that Will Revolutionize Supply Chain Logistics *Journal of Business Logistics: The International Journal of Logistics Management*, 4 (2), PP. 13-24.
- Chan, C. K., & Lee, H. W. J. (2005) *Successful strategies in supply chain management*, United States of America: Idea Group Inc.
- Chan, F.T.S. & Qi H.J. (2007). Feasibility of performance measurement system for supply chain: a process-based approach and measures, *Integrated Manufacturing Systems*, Vol.14, Issue 3, pp. 179-190.
- Chan, F.T.S. & Qi, H.J. (2003) An innovative performance measurement method for supply chain management, *Supply Chain Management, An International Journal*: Vol. 8, Nos. 3-4, pp. 209-23.
- Childhouse P, Towill DR., 2003, simplified material flow holds the key to supply chain integration, *OMEGA*; 31 (1):17–27.
- Choy, KL, Harry, KHC, Lee, WB & Felix, TSC (2007) Development of performance Measurement System in Managing Supplier Relationship for Maintenance Logistics Providers', *Benchmarking*, vol.14, no.3, pp.352-368.
- Christopher Logistics and Supply Chain Management: Creating Value-Adding Networks, [Report]. - [s.l.]: Financial Times Prentice Hall, Harlow., 2005.
- Christopher M. Logistics and supply chain management [Report]. - London: Potman Publishing, 1992.
- Christopher M., (2008) *Logistics and Supply Chain Management*, 4th edition Harlow: Financial Times Prentice Hall.
- Christopher, M. (1998) *Logistics and supply chain management: strategies for reducing cost and improving service*, 2nd edition London: Financial Times-Pitman Publishing.
- Clark, K. B. (1989) Project Scope and Project Performance: The Effect of Parts, *Management Science*, 35(10), pp. 1247-1264.
- Clarke, T. (Ed.). (2004). *Theories of corporate governance* (pp. 1-31). New York: Routledge.
- Cooper M.C. & Ellram L.M. (1993) Characteristics of Supply Chain Management and the Implications for Purchasing and Logistics Strategy [Journal] // *International Journal on Logistic Management* (V4).
- Cooper M.C., Lambert D.M. & Pagh J.D. (1997) Supply chain management: more than a new name for logistics. [Journal]. - [s.l.] : *The International Journal of Logistics Management*.
- Cousins, P.D., Lawson, B., Squire B. (2006) Supply chain management theory and practice the emergence of an academic discipline, *International Journal of Operation and Production Management*, 26(7) p- 697-702
- Creswel, J. (1999). *Research Design- 4thedn*. London: Cultural Policy, Available from: <https://www.researchgate.net/file.PostFileLoader.html?id=55eb95f16307d984de8>. [Dec 17 2017].

- David Asamoah, Jonathan Annan & Samuel Nyarko (2012). AHP Approach for Supplier Evaluation and Selection in a Pharmaceutical Manufacturing Firm in Ghana. *International Journal of Business and Management* Vol. 7, No. 10.
- Dempsey, 2018: The Benefits of Supply Chain Management; supply chain conference, London. Ronoh.R, 2016. *International Journal of Science and Research*, 5(11), PP.1967-19.
- Dereje Asfaw, (2012). Impact of Supply Chain Management Practices on the organizational Performance of basic metal and engineering industries in Ethiopia. Unpublished Master's Thesis, University of South Africa.
- Dobler, D.W., & Burt, D.N. (1996). *Purchasing and Supply Management*. (6th ed.). New York: McGraw Hill.
- Donlon JP. (1996) Maximizing value in the supply chain, *Chief Executive*, 117,54–63.
- EAP PLC annual board meetings report, June. 2018
- EAP PLC annual internal report, September. 2019
- EAP PLC company profile, September. 2000
- Ebrahim KARIMI & Mahmoud RAFIEE, 2014, Analyzing the Impact of Supply Chain Management Practices on Organizational Performance through Competitive Priorities Case Study: Iran Pumps Company *International Journal of Academic Research in Accounting, Finance and Management Sciences* Vol. 4, No.1, pp. 1–15
- Ellram, L. Cooper, M., 1993, "Tightening the Supply Chain," *Production and Inventory Management Journal*. 34,2,63-70.
- Ellram, L.M, W.L. Tate and C. Billington. (2007) *Services Supply Management: the next frontier for improved organizational performance*, *California Management Review*, 49(4), pp. 44-66.
- EPA (Ethiopian Pharmaceutical Association), (2011). *Ethiopian Pharmaceutical Association Annual Conference Proceeding Report*, Addis Ababa, Ethiopia.
- Field, A. (2005). *Discovering Statistics Using SPSS*, 2nd edn. London: Sage Publication. Available from: http://www.prismjournal.org/fileadmin/Praxis/Files/Journal_Files/Evaluation_Issue/DUHE_BOOK_REVIEW.pdf. [March 10 2016].
- Fisher, M 1997, "What is the right supply chain for your product", *Harvard Business Review*, March/April.
- FMOH (Federal Ministry of Health) & World Health Organization, (2003). *Assessment of the pharmaceutical sector in Ethiopia*, Addis Ababa, Ethiopia.
- Gattorna, J., 2006. *Living Supply Chains and Harlow*. Financial Times: Prentice Hall.
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step, a simple guide and reference. 11.0 update 4th edn*. Boston: Allyn & Bacon. Available from https://en.wikipedia.org/wiki/Cronbach's_alpha [January 23 2016].

- Gunasekaran, A. (2006) Supply Chain management: Theory and applications. *European Journal of Operational Research*, 159: 265–268.
- Gunasekaran, A., Patel, C. & McGaughey, R.E. (2004), A framework for supply chain performance measurement, *International Journal of Production Economics*, Vol. 87 No. 3, pp. 333-47.
- Gunasekaran, A., Patel, C., & Tirtiroglu, E. (2001) Performance Measures and Metrics in a Supply Chain Environment, *International Journal of Operations and Production Management*, 21(1/2), pp. 71-87.
- Handfield R.B. & Nichols E.L. *Introduction to supply chain management* [Book]. - New Jersey: [s.n.], 1999.
- Harland C.M. *Supply chain management: relationships, chains and networks* [Journal]. - [s.l.] : British Academy of Management , 1996. - 80: Vol. 7.
- Hendrick T.E. & Ellram L.M., (1993), *Strategic Supplier Partnerships: An International Study* (Tempe, Ariz; Center for Advance Purchasing Studies (CAPS), 1993).
- Hines P. (1994) *Creating world class suppliers: Unlocking mutual competitive advantage* [Report]. - London: Pitman Publishing.
- Houlihan J.B. *International supply chain management* [Journal] // *International Journal of Physical Distribution and Logistics Management*. - 1985.
- Huan, Samuel, Sheoran, Sunil and Wang, Ge., 2004, A research and analysis of supply chain operations reference (SCOR) model. *Supply Chain Management: An International Journal*, Vol. 9, Num. 1,
- Jayashree Dubey, M.L Sai Kumar (2007). *Supply Chain Management*. New Century Publications, Second edition
- Kaye S. (2010). Meeting the Pharmaceutical Industry's Global Supply-Chain Challenge. *Pharmaceutical & Medical Packaging News*, Volume 18, No. 3.
- Keebler, J. S., Manradt, K. B., Durtsche, D. A., & Ledyard, D. M. (1999). Keeping score: Measuring the business value of logistics in the supply chain.
- Klundert, J., (2003) *Supply Chain Management Technologies*, Venlo: Mateum / Universtiteit Maastricht
- Koplin, J., Seuring, S., & Mesterharm, M. (2007)" Incorporating sustainability into supply management in the automotive Industry - the case of the Volkswagen AG", *Journal of Cleaner Production*, 15(11-12), 1053-1062.
- Kuei, C.H., Madu, N.C. & Lin, C. (2001) The relationship between supply chain quality management practices and organizational performance. *International Journal of Quality & Reliability Management*, 18 [8], 864-872.
- Kulp, S.C., Lee, H.L., Ofek, E., 2004. Manufacturer benefits from information integration with retail customers. *Management Science* 50 (4), 431–444.
- Lamming R.C. & Hampson J. *The environment as a supply chain management issue* [Journal] // *British Journal of Management* (v7), (Special Issue). - 1996.

- Lazarevic, P. Sohal, A. Baihaqi, I. (2007). Supply chain management practices & supply chain performance in the Australian Manufacturing Industries, Monish.
- Lee & Whang, 2001, E-Business and supply chain integration, Supply Chain Concepts, Supply Chain Management Journal
- Lee Hau & Corey Billington. (2000). The Evolution of Supply Chain Management Models and Practice, Hewlett-Packard. 25(5), 42-63. <http://dx.doi.org/10.1287/inte.25.5.42>
- Lee, H. & Billington, C. (1992) Managing Supply Chain Inventories: Pitfalls and Opportunities. Sloan Management Review, 65-73.
- Lohman, C.; Fortuin, L. & Wouters, M. (2008), designing a performance measurement system: A case study, European Journal of Operational Research, vol.156, Issue 2, pp.267-286.
- Lummus K., Vokurka D. & Albert A. Strategic supply chain planning [Journal] // Production and Inventory Management Journal (v39, n3). - 1998.
- Manian,A, Dehghan Nayeri,M, AkhavanAnvari,M.R, Ghorbani,D. (2010) Identify effective factor on supply chain performance (case study: automotive parts industry), Iran Management Journal,Year V, No. 17, pp. 69-87.
- Mason, K. and Leek, S. (2008) Learning to build a supply network: An exploration of dynamic business models, Journal of Management Studies, Vol. 45, pp. 774-99.
- McCormack, K.P, Johnson, W.C., and W.T. Walker. (2012) Supply Chain Networks and Business Process Orientation: Advanced Strategies and Best Practices. CRC Press LLC. Boca Raton Florida.
- McLaughlin, J., Motwani, J., Madan, M. S. and Gunasekaran, A. (2003) Using information technology to improve downstream supply chain operations: A case study. Business Process Management Journal, 9(1): 69-80.
- Mentzer, et al., 2001. Defining Supply Chain Management: Journal of Business Logistics, 22(2), pp.192-223.
- Mentzer, J. T., 2004. Fundamentals of Supply Chain Management: Twelve drivers for competitive advantage. Thousand Oaks. CA: Sage Publications, Inc.
- Mesfin Berhane, (2007). Model Development of Supply Chain Management System: A case study of Mesfin Industrial Engineering PLC. Unpublished Master's Thesis, Addis Ababa University.
- Min S, Mentzer JT. (2004) „Developing and measuring supply chain concepts“, Journal of Business Logistics; 25(1):63–99.
- Min, S. et al., 2005. Supply chain collaboration: what's happening: The International Journal of Logistics Management, 16(2), pp.237-256.
- Moberg, C.R., B.D. Cutler, A. Gross and T.W. Speh, 2002, Identifying antecedents of information exchange within supply chains. Int. J. Physical Distribution Logistics, Management

- Msimangira K.A. (2003). Purchasing and supply chain management practices in Botswana. *Supply Chain Management: An International Journal*, 8(1), 7 – 11.
- Mugenda, M., & Mugenda, G. (2003). *Research Methods, Qualitative and Quantitative Approaches*. Nairobi: ACTS press. Available at: www.bookzz.org. [October 19 2017].
- Mwilu, J.M. (2013). Supply chain management practices and performance among public research institutions in Kenya. Unpublished University of Nairobi.
- Narasimhan, R., & Nair, A. (2005) The Antecedents Role of Quality, information sharing and supply chain proximity on Strategic Alliance Formation and Performance.” *International Journal of Production Economics*, 96(3), 301-313.
- PFSA (Pharmaceutical Fund and Supply Agency), (2012). Standard Operating Procedures Manual for the Pharmaceuticals Logistics Systems in Health Facilities of Ethiopia, PFSA, Ethiopia.
- Saunders M.J. (1995). Chains, pipelines, networks and value stream: The role, nature and value of such metaphors in forming perceptions of the tasks of purchasing and supply management [Conference] // Proceedings of the 1st Worldwide Research Symposium on Purchasing and Supply Chain Management. - Tempe, Arizona: [s.n.].
- Simchi-Levi, D., Kaminsky, P., Simchi-Levi, E, 2003, *Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies*, Second Edition, New York: McGraw-Hill
- Tan, K. C., Kannan, V. R., & Handfield, R. B. (1998) Supply chain management: supplier performance and firm performance, *International Journal of Purchasing and Materials Management*, 34, 2-9.
- Tracey, M. Lim, J.S & Vonderembse; M.A (2005) The Impact of Supply Chain Management Capabilities on business performance. *Supply Chain Managers: An International Journal*, 10 (3), 179-191.
- Van der Veen J. & Robben H. *Supply Chain Management: een Overzicht*. (Supply Chain Management: an Overview) [Report]. - [s.l.] : Nijenrode Mgmt. Review, .., 1997.
- Vereecke, A. & Muylee, S. (2006) Performance improvement through supply chain collaboration in Europe, *International Journal of Operations Production Management*, vol. 26, no. 11, pp. 1176-98.
- Whewell R (2009). *Supply Chain in the Pharmaceutical Industry: Strategic Influences and Supply Chain Responses*.
- Wisner, J.D., Leong, G.K., Tan, K.-C. (2005) *Principles of supply chain management: A balanced approach*, South-Western Cengage, Mason.
- Yeo K.T. & Ning J.H. —Integrating Supply chain and critical chain concepts in engineer-procure-construct (EPC) projects [Journal] // *International Journal of Project Management*. - 2002. - pp. 253–262.
- Zailani S. & Rajagopal P. (2005). Supply chain integration and performance: US versus East Asian companies. *Supply Chain Management: An International Journal*, 10(5), 373-393.

- Zhao, X. & J. Xie, 2002. Forecasting errors and the value of information sharing in a supply chain *International Journal Production, Res.*, 40: 311-335
- Zhu, Q. & Sarkis, J. (2004) Relationships between Operational practices and performance among early adopters of green supply chain management practices in Chinese Manufacturing enterprises. *Journal of Operations Management*, 22(3), 265-289.
- Zu, X., & Kaynak, H. (2012). An agency theory perspective on supply chain quality management. *International Journal of Operations & Production Management*, 32(4), 423-446.

Other related Sources

- [<http://www.supply-chain.org/>].

Annexes

QUESTIONNAIRE FOR PARTICIPANTS OF THE SURVEY

Questionnaires for Employees of EAP PLC

Dear respondent,

My name is Hibirework Muluken and am student in Jimma University pursuing a Master Degree in Business Administration. As part of the requirement for the degree, I am carrying out a thesis research work entitled "Supply Chain Management and performance: A case study in East African Pharmaceuticals plc". Your organization is one of the organizations selected for this study. This questionnaire is, therefore, issued purely for academic purpose. Hence, you are kindly requested to cooperate by filling in questionnaires attached herewith. All the information you provided will remain strictly confidential and will be used for the intended purpose only. Your cooperation in ensuring that the questionnaires are answered is highly appreciated.

If you need any clarification, please contact me through **Tel. +251911 37 60 74** or **email: hibirework@yahoo.com**

Thank you in advance your cooperation!

Both supplier and customer

Section –II: Supply chain management practices

1. To what extent do you agree with the following statements related with implementation of supply chain management practices in your company (EAP)?

Please indicate to what extent the following SCM practices have been implemented in your company.

Use the scale 1 – 5 where 1 = Strongly Disagree and 5= Strongly Agree

Statements	1	2	3	4	5
Supply Chain Management has been implemented within the company					
Suppliers are informed of the need to supply quality goods					
Selection of supplier conducted under consideration cost					
Suppliers have become part of the company					
Suppliers have helped the company in preparation of specifications					
There is joint planning between customers and suppliers					
The company has manageable suppliers					
The suppliers understand well the requirements of the company					
The suppliers deliver quality goods and products					
There is shorter lead time towards service delivery					
Outsourced services are excellently performed					
The supplier and customer meet regularly to discuss issues that relate to outsources services					
Customers receive goods and services at the right quality, quantity, time & place,					
There is Increased capacity to offer services to customers					
There is efficient internal communication					
There is adequacy of IT systems throughout the supply chain					
Exchange of information between suppliers and the company is reliable					
Data is shared between the company and the suppliers to enhance productivity					
There is an automated ordering system to major suppliers					

Section –III: Effects of SCM Practices on Performance

1. To what extent do you agree with the following statements related with Strategic supplier partnership practice in your company (EAP)?

The statements are designed in Likert scale in five levels. Please rate your level of agreement based on your evaluation. The number 1 -5 designates the following meanings.

(5) - Strongly agree: (4) - Agree: (3) - Neutral: (2) – Disagree: (1) - Strongly Disagree

Statements	Ratings				
	1	2	3	4	5
New suppliers are subjected to an intensive supplier appraisal during their selection					
Vendor rating for existing suppliers is done to assess their performance regularly					
The company consider quality as number one criterion in selecting suppliers					
The company regularly solve problems jointly with its suppliers					
There is a continues support of suppliers to improve their product quality					
The company has a continuous improvement programs that include the key suppliers					
The key suppliers are included in the planning and goal-setting activities of the company					
The company actively involved the suppliers to provide information on new product specification development					

2. To what extent do you agree with the following statements related with contract management practices in EAP?

The statements are designed in Likert scale in five levels. Please rate your level of agreement based on your evaluation. The number 1 -5 designates the following meanings.

(5) - Strongly agree: (4) - Agree: (3) - Neutral: (2) – Disagree: (1) - Strongly Disagree

Statements	Ratings				
	1	2	3	4	5

All the suppliers of goods and services are contracted through approved contracting tools					
Supply chain staffs are involved in contract monitoring and control processes					
The company always monitor and control the contracts execution on time					
The contact and monitoring control processes used in the company are reviewed and updated regularly					
Documented policy determines decision making on contract performance and monitoring					

3. To what extent do you agree with the following statements related with information sharing practices in your company (EAP)?

The statements are designed in Likert scale in five levels. Please rate your level of agreement based on your evaluation. The number 1 -5 designates the following meanings.

(5) - Strongly agree: (4) - Agree: (3) - Neutral: (2) – Disagree: (1) - Strongly Disagree

Statements	Ratings				
	1	2	3	4	5
The level of IT-based automated order sending and receiving from major suppliers and customers					
There is an automated ordering system to major supplier					
The company inform trading partners in advance of changing needs					
The trading partners share proprietary information with the company					
Data is shared between the organization and the suppliers to enhance productivity					
The company and its partners exchange information that helps establishment of business planning					

4. To what extent do you agree with the following statements regarding the SCM performance of your company (EAP)? The scale below will be applicable:

(5) - Strongly agree: (4) - Agree: (3) - Neutral: (2) – Disagree: (1) - Strongly Disagree

Statements	Ratings				
	1	2	3	4	5
The company supply products with the right quality to					

its customers request					
The company improved order fulfillment capacity.					
The company provide in/on time delivery					
The company able to deliver goods and services within promised time during emergency.					
Initiatives to provide customer orders with the shortest possible time in the company					
The company able to deliver full list of requested items and exceptional requests.					
Providing customer orders with the lowest possible cost/price in the company					
The service has reduced total distribution and delivery cost.					
Supply chain has minimized inventory cost.					

Source: Adopted and modified from Li et al. (2006) and Shepherd and Gunter (2006)

Section –IV: Challenges of SCM

5. In your opinion, what are the major challenges that your organization has faced in the implementation of SCM practices (if any)?

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6. What are the recommendations or possible solution to solve such challenges raised so far?

7. What do you suggest in general to improve the supply chain management performance in EAP PLC?

Thanks for your Cooperation!!!